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CHROMOSOME NUMBERS IN ANGIOSPERMS IV

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CHROMOSOME NUMBERS IN ANGIOSPERMS IV

BY

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In preparing this annual publication of chromosome numbers in angiosperms, any papers published earlier than 1930 and not included in previous lists (GAISER 1926, 1930*a*, 1930*b*) have been first assembled in the supplement. Thus the main list consists entirely of reports published in 1930.

The same method of arrangement as had been used previously has again been followed here.

Reports of chromosome numbers published in 1931 and 1932 will be published pointly after the completion of the latter.

L. O. GAISER

CHROMOSOME NUMBERS IN ANGIOSPERMS III

Genetica XII, 1930

ERRATA

Page 176 — *Malus coronaria* MILL., n = 34, 2n = 68, NEBEL, 1929*b*.
Malus prunifolia BORKH., 2n = 51 instead of 102, NEBEL, 1929*b*.
Page 185 — *Linum usitatissimum*, n = 16 instead of 6, INOUYE, 1929.
Page 188 — Include CHRISTOFF, 1929 after *Vitis riparia grand glabre*.
Vitis vinifera var. *Grand noir d. la* c., 2n = 38, NEGRUL, 1929 instead of 1928.
Page 190 — *Seibel* 28 should be *Seibel* 128.
Insert *Vitis Chasselas* × *Berlandieri* 41B., 2n = 28, NEGRUL, 1929.
Insert *Vitis riparia* × *Gamay* (Oberlin 595), 2n = 38, NEGRUL, 1929.
Page 191 — Insert for *Vitis riparia* × *V. vinifera* var. *Gamay* 595 *Oberlin*, 2n = 38, NEGRUL, 1929.
Page 223 — *Panicum dichotomiflorum* MICHX. to *P. scribnerianum* NASH are by CHURCH, 1929*b* instead of RAU, 1929*a*.
Page 239 — Omit n = 12 for *Rhoeo discolor*, DARLINGTON, 1929*c*.
Page 240 — *Hemerocallis fulva*, clon *Europa*, chromosome number by STOUT and SUSA, 1929, *Hemerocallis longituba* and following by TAKENAKA, 1929.
Page 243 — *Muscari* species should be on page 242 before *Yucca filamentosa*.
Page 245 — Insert *Iris susiana*, 2n = 20, SIMONET, 1929*c*.
For *Iris Alberti* REGEL, n = 12 instead of 2n = 12, SIMONET, 1929*d*.

CHROMOSOME NUMBERS IN ANGIOSPERMS II

Bibliographia Genetica VI, 1930

ADDITIONAL ERRATA [1])

Page 220 — *Pirus malus* var. *Canadian Reinette*, 2n = 51 instead of 15, RYBIN, 1927*a*.
Page 239 — *Prunus nivea* MIYASHI, n = 16, OKABE, 1927, but n = 24, OKABE, 1928.

[1]) See also Genetica XII, 1930.

Page 263 — Insert *Viola Humboldtii* TR. et PL., n = 27, HEILBORN, 1926.
Insert *Viola riviniana* RCHB., n = 20, CLAUSEN, 1927*b*.

Page 289 — Insert *Primula Forbesii*, n = 9, SUGIURA, 1928*a*.
Primula officinalis, n = 9, instead of 11, MARCHAL, 1920.

Page 322 — The two last species of *Sambucus* should be *Lonicera alseuosmoides* GRAEB. and *L. stabiana* GUSS., DE VILMORIN & SIMONET, 1927*b*.
Bryonia dioica, n = 12 instead of 10, STRASBURGER, 1910*c* and *Bryonia dioica* JACQ, n = 10 instead of 12, MEURMAN 1925*b*.

Page 324 — *Cucurbita pepo*, n = 12 instead of 14, LUNDEGARDH, 1914.

Page 330 — *Calendula officinalis*, 2n = 28 instead of 24, LUNDEGARDH, 1909.

Pages 390, 391 — *Lilium Kolpakowsiana* REGEL etc. to L. sp. (?) Murillo (hort.) should be *Tulipa*.

Page 394 — Chromosome numbers for *Ornithogalum narbonense*, *O. nutans*, *O. pyrenaicum* and *O. umbellatum*, SPRUMONT, 1928 should be in the 2n instead of the n column.

Page 400 — Insert 2n = 12, for *Yucca glauca*, FOLSOM, 1916.

Page 411 — *Cypripedium insigne*, 2n = 24—26 instead of 24—36, HEITZ, 1926.

Page 412 — *Ionopsidium acaule* RCHB., n = 12, 2n = 24, CHIARUGI, 1928.
„ *Savianum* (CAR.) BALL., n = 16, 2n = 32, CHIARUGI, 1928
should be transferred to page 204 before *Iberis amara*.

Supplement
CHROMOSOME NUMBERS IN ANGIOSPERMS TO YEAR 1930

DICOTYLEDONEAE

	n	2n	
URTICALES			
MORACEAE			
Humulus japonica SIEB. et ZUCC. ♂	7+1$_3$[1]), 6+15		KIHARA, 1929*b*.
Humulus lupulus ♀		20	„ , 1929*a*.
Cannabis sativa L. var. *Karafuto*	10 [2])		HIRATA, 1929.
Cannabis sativa L. var. *Tochigi*	10 [2])		„ , „
PROTEALES			
PROTEACEAE			
Grevillea macrostachya BRONGN. et GRIS	8		MESSERI, 1928.
CENTROSPERMAE			
CHENOPODIACEAE			
Beta vulgaris		18	OKSIJUK, 1927.
SARRACENIALES			
DROSERACEAE			
Drosophyllum lusitanicum LINK		12	BEHRE, 1929.
Dionaea muscipula ELLIS		32	„ „
Dionaea muscipula	15		SMITH, 1929.
DROSERA			
Section Rossolis			
Drosera anglica		40	BEHRE, 1929.
„ *capensis* L.		40	„ „

[1]) In the male plants there are usually 7 pairs of autosomes and a tripartite sex chromosome (y_1 x y_2). In one male plant there were found 6 bivalents and a pentapartite chromosome complex consisting of a pair of autosomes and the 3 sex chromosomes (y_1 s s x y_2).

[2]) In the male and male intersexual plants there occurred an XY pair of chromosomes and in the female and female intersexual plants an XX pair.

	n	2n	
DROSERACEAE (continued)			
Drosera (continued)			
Section Rossolis (continued)			
Drosera intermedia		20	BEHRE, 1929.
„ *rotundifolia*		20	„ „
„ *spathulata* LABILL. . .		80	„ „
Section Ptycnostigma			
Drosera cistiflora		60	„ „
Section Phycopsis			
Drosera binata LABILL.. . . .		32	„ „
Section Psychophila			
Drosera regia		34	„ „
Section Bryastrum			
Drosera pygmaea D. C.	probably	32	„ „
ROSALES			
PITTOSPORACEAE			
Pittosporum Tobira	12		SCHÜRHOFF, 1929*b*.
LEGUMINOSAE			
Lupinus mutabilis		42	MILOVIDOV, 1926.
Medicago sativa		32	ELDERS, 1926.
Melilotus alba		16	„ „
Melilotus alba annua.		16	„ „
Melilotus officinalis		16	„ „
Vicia amphicarpa		10	SVESHNIKOVA, 1929.
„ *angustifolia brachisomica*		12	„ „
„ *angustifolia dolichosomica*		12	„ „
„ *cracca* (one race)		14	„ „
„ *cracca* (another race) . .		28	„ „
„ *sativa*		12	„ „
„ *angustifolia brachisomica* × *V. angustifolia dolichosomica*		12	„ „
„ *cracca* (2n = 14) × *V. cracca* (2n = 28)		21	„ „
„ *cracca* (2n = 12) × *V. cracca* (2n = 14)		13	„ „
„ *sativa* × *V. amphicarpa*		11	„ „
„ *sativa* × *V. angustifolia brachisomica*		12	„ „
„ *sativa* × *V. angustifolia dolichosomica*		12	„ „
„ *sativa* × *V. macrocarpa* .		12	„ „
GERANIALES	n	2n	
LINACEAE			
Linum alpinum JACQ.	18	36	KIKUCHI, 1929.

	n	2n	
LINACEAE (continued)			
Linum (continued)			
Linum altaicum FISCH. (from Delft)	9	18	KIKUCHI, 1929.
„ *americanum* L. (from Tabore)	15	30	„ „
„ *angustifolium* HUDS. (from Holland)	15	30	„ „
„ *austriacum* L. (from Trieste)	9	18	„ „
„ *corymbiferum* DESF. (from Tabore)	15	30	„ „
„ *extraaxillare* KIT. (from Switzerland)	9	18	„ „
„ *flavum* L. (from Amsterdam)	15	30	„ „
„ *hologynum* REICHB. (from Lithuania)	9	18	„ „
„ *Lewisii* PURSH. (from Tabore)	9	18	„ „
„ *monogynum* FORST.	43?	86?	„ „
„ *muelleri* MORIS (from Edinburgh)	9	18	„ „
„ *narbonense* L. (from Amsterdam)	9	18	„ „
„ *perenne* L. (from Trieste)	9	18	„ „
„ *sibiricum* DC. (from Sutton)	9	18	„ „
„ *usitatissimum* L. (from Sapporo)	15	30	„ „
„ *alpinum* JACQ. × *L. perenne* L. F_1	$9+\frac{9_1}{2}$	27	„ „
„ *alpinum* JACQ. × *L. perenne* L. F_2		20, 28, 34	„ „
RUTACEAE			
Citrus sinensis var. *Shamouti*	9		OPPENHEIM & FRANKEL, 1929
EUPHORBIACEAE			
Mercurialis annua	8 [1]		SZTAJGERWALDÓWNA, 1929.
Euphorbia dulcis L.	14		CARANO, 1926.
SAPINDALES			
BALSAMINACEAE			
Impatiens Balsamina	7		KANNA, 1926.

[1]) One pair of chromosomes was very small.

	n	2n	
MALVALES			
MALVACEAE			
Gossypium herbaceum		52—56	VUKOVIC & GLISIC, 1929.
MYRTIFLORAE			
OENOTHERACEAE			
Oenothera biennis	$\frac{14}{2}$ [1]		TUDA, 1929.
„ *fallax*	$\frac{14}{2}$ [2]		HÅKANSSON, 1928.
„ *gigantea* (diploid) . .	$\frac{14}{2}$ [2]		„ „
„ *grandiflora* (self-pollinated F_1)	$\frac{14}{2}$ [2]		GERHARD, 1929.
„ *Lamarckiana* . . .	$\frac{14}{2}$ [2]		HÅKANSSON, 1928; TUDA, 1929.
„ *lata*	$\frac{15}{2}$ [3]		HÅKANSSON, 1928.
„ *ochracea* (self-pollinated F_1).	7		GERHARD, 1929.
„ *pulla*	$\frac{15}{2}$ [4]		HÅKANSSON, 1928.
„ *rubrinervis* 1 and 2 .	$\frac{14}{2}$ [5]		„ „
„ *rubrisepala*	$\frac{14}{2}$ [5]		„ „
„ *rubristachys*	$\frac{14}{2}$ [2]		„ „
„ *sinuata*	$\frac{14}{2}$ [6]		TUDA, 1929.
„ *stricta*	$\frac{15}{2}$ [3]		HÅKANSSON, 1928.
„ *biennis* × *O. biennis cruciata*	$\frac{14}{2}$ [1]		TUDA, 1929.
„ *biennis* × *O. cruciata*	$\frac{14}{2}$ [1]		„ „
„ *biennis* × *O. Lamarckiana*	$\frac{14}{2}$ [7]		„ „

[1]) Arranged as a ring of 6 plus a ring of 8 chromosomes.
[2]) Arranged as a ring of 12 plus 1 pair of chromosomes.
[3]) Arranged as a ring of 13 plus 1 pair of chromosomes.
[4]) Arranged as a ring of 6 plus 3 pairs plus 1 trivalent chromosomes.
[5]) Arranged as a ring of 6 plus 4 pairs of chromosomes.
[6]) Arranged as a ring of 14 chromosomes.
[7]) Arranged as a ring of 6 plus a ring of 8, as a ring of 12 plus one pair etc.

OENOTHERACEAE (continued)	n	2n	
Oenothera (continued)			
Oenothera biennis × *O. sinuata*	$\frac{14}{2}$ [1]		TUDA, 1929.
„ *Cockerelli* × *O. grandiflora* F_2 *curtitruncata*	$\frac{14}{2}$ [2]		GERHARD, 1929.
„ *grandiflora* × *O. biennis* F_2 *rubiacuta*	$\frac{14}{2}$ [3]		„ „
rubitruncata	$\frac{14}{2}$ [2]		„ „
„ *grandiflora* × *O. cruciata* F_2 *flexitruncata*	$\frac{14}{2}$ [4]		„ „
semigigas	$\frac{21}{2}$		„ „
„ *grandiflora* × *O. Hookeri* F_2 No. 1	$\frac{14}{2}$ [5]		„ „
No. 7	7		„ „
„ *grandiflora* × *O. muricata* F_2 *curvitruncata*	$\frac{14}{2}$ [3]		„ „
„ *grandiflora* × *O. suaveolens* F_2 *flaviacuta*	$\frac{14}{2}$ [6]		„ „
flavitruncata	$\frac{14}{2}$ [7]		„ „
„ *Lamarckiana* × *O. biennis cruciata*	$\frac{14}{2}$ [7]		TUDA, 1929.

[1]) See foot-note 1 page 111.
[2]) See foot-note 6 page 111.
[3]) Arranged as a ring of 10 plus 2 pairs of chromosomes.
[4]) Arranged as a ring of 10 plus a ring of 4 chromosomes.
[5]) Arranged as a ring of 8 plus 3 pairs of chromosomes.
[6]) Arranged as a ring of 4 plus 5 pairs of chromosomes.
[7]) See foot-note 2 page 111.

	n	2n	
OENOTHERACEAE (continued)			
Oenothera (continued)			
Oenothera Lamarckiana × *O. grandiflora* F_2			
acutilaeta	$\frac{14}{2}$ [1]		GERHARD, 1929.
acutivelutina	$\frac{14}{2}$ [2]		„ „
truncovelutina	$\frac{14}{2}$ [2]		„ „
No. 6	$\frac{14}{2}$ [3]		„ „
No. 9	7		„ „
No. 12	7		„ „
„ *muricata* × *O. grandiflora* F_2			
rigidiacuta	$\frac{14}{2}$ [4]		„ „
rigiditruncata	$\frac{14}{2}$ [5]		„ „
„ *sinuata* × *O. biennis*	$\frac{14}{2}$ [5]		TUDA, 1929.
„ *sinuata* × *O. Lamarckiana*	$\frac{14}{2}$ [6]		„ „
„ *suaveolens* × *O. grandiflora* F_2			
albiacuta	$\frac{14}{2}$ [1]		GERHARD, 1929.
albitruncata	$\frac{14}{2}$ [7]		„ „
PRIMULALES			
PRIMULACEAE			
Primula jesoana	13		MIYAJI, 1929.
malacoides	9		KOBEL, 1927.
malacoides (gigas)	18		„ „
malacoides (one plant)	17	34	„ „
CONTORTAE			
ASCLEPIADACEAE			
Cynanchium acutum	9		FRANCINI, 1927.

[1]) See foot-note 3 page 112.
[2]) Arranged as a ring of 6 plus a ring of 4 plus 2 pairs of chromosomes.
[3]) See foot-note 7 page 112.
[4]) Arranged as a ring of 8 plus a ring of 4 plus 2 pairs of chromosomes.
[5]) See foot-note 6 page 111.
[6]) Arranged partly as a ring of 10 plus a ring of 4 chromosomes.
[7]) See foot-note 2 page 111.

TUBIFLORAE	n	2n	
POLEMONIACEAE			
Phlox divaricata	14	KELLY & WAHL, 1929	
„ *Drummondi*	14	„	„
„ *glaberrima*	14	„	„
„ *maculata*	14	„	„
„ *ovata*	14	„	„
„ *paniculata*	14	„	„
„ *pilosa*	14	„	„
„ *stolonifera*	14	„	„
„ *subulata*	14	„	„
LABIATAE			
Mentha aquatica	18	SCHÜRHOFF, 1929*a*.	
„ *arvensis*	36	„	„
„ *canadensis*	27	„	„
„ *piperita*	18	„	„
„ *rotundifolia*	27? [1]	„	„
„ *silvestris*	9	„	„
„ *verticillata*	27	„	„
„ *viridis*	18	„	„
SOLANACEAE			
Datura metel L.	12	GLISIC, 1928.	
Nicotiana Bigelovii	24	CHRISTOFF, 1929.	
„ *glutinosa*	12	„	„
„ *longiflora*	10	„	„
„ *nudicaulis*	24	„	„
„ *paniculata*	12	„	„
„ *plumbaginifolia*	10	„	„
„ *sylvestris*	12	„	„
„ *suaveolens*	16	„	„
„ *Tabacum* var. *macrophylla*	24	„	„
„ *trigonophylla*	12	„	„
„ *Bigelovii* × *N. nudicaulis*	$\frac{48}{2}$	„	„
„ *Bigelovii* × *N. Tabacum* var. *macrophylla*	$\frac{48}{2}$	„	„
„ *glutinosa* × *N. nudicaulis*	$\frac{36}{2}$	„	„

[1] The chromosomes have not been counted in this form but he estimated them to be 27.

	n	2n	
SOLANACEAE (continued)			
Nicotiana (continued)			
Nicotiana nudicaulis × *N. trigonophylla*	$\frac{36}{2}$		CHRISTOFF, 1929.
„ *paniculata* × *N. glutinosa*	$\frac{24}{2}$		„ „
„ *suaveolens* × *N. longiflora*	$\frac{26}{2}$		„ „
„ *suaveolens* × *N. plumbaginifolia*	$\frac{26}{2}$		„ „
„ *Tabacum* var. *macrophylla* × *N. glutinosa*	$\frac{36}{2}$		„ „
			„ „
„ *Tabacum* var. *macrophylla* × *N. sylvestris*	$\frac{12+12_1}{2}$		„ „
SCROPHULARIACEAE			
Pentstemon laevigatus		96	LA COUR, 1929.
CAMPANULATAE			
COMPOSITAE			
Crepis reuteriana	4		BABCOCK & HOLLINGSHEAD, 1929.

MONOCOTYLEDONEAE

	n	2n	
GLUMIFLORAE			
GRAMINEAE			
Avena barbata POTT.	14		NISHIYAMA, 1929.
„ *byzantina* C. KOCH.	21		„ „
„ *fatua* L.	21		„ „
„ *sativa* L.	21		„ „
„ *sterilis* L.	21		„ „
„ *strigosa* SCHREB.	7		„ „
Avena hybrids			
Avena barbata POTT. × *A. strigosa* SCHREB.	7—9 [1]	21	„ „
„ *barbata* POTT. × *A. fatua* L.	2—11 [2]	35	„ „

[1] This number included 0—3 trivalents and occasionally a tetravalent.
[2] Frequently 1—4 trivalents were found.

	n	2n	
GRAMINEAE (continued)			
Avena hybrids (continued)			
Avena barbata POTT. × *A. sterilis* L.	7—13 [1]	35	NISHIYAMA, 1929.
„ *fatua* L. × *A. sativa* L.	21 [2]		„ „
„ *fatua* L. × *A. sterilis* L.	21 [2]		„ „
„ *sativa* L. × *A. byzantina* C. KOCH.	21 [2]		„ „
„ *sterilis* L. × *A. byzantina* C. KOCH.	21 [2]		„ „
Arrhenatherum avenaceum		ca 40	DAVIES, 1927.
Dactylis glomerata	14	28	„ „
Triticum compactum creticum × *T. vulgare lutescens* (Marquis) F_3 progeny normal	21	42	VASILJEV, 1929.
heterozygous speltoids	$20+1_I$	41	„ „
homozygous speltoids		40	„ „
(*Triticum polonicum* × *T. spelta*) F_4 F_5 (KIHARA's dwarfs lacking f or g chromosomes)	20		WAKAKUWA, 1929.
(KIHARA's dwarfs n = 20 crossed) F_1	$19+2_{\overline{I}}$		„ „
(KIHARA's dwarfs n = 20 crossed) F_2	19, $19+1_I$, $19+2_{\overline{I}}$, 20, $20+1$, 21		„ „
(KIHARA's dwarfs 2n = 39 crossed) progeny	19, $19+1_I$ 20		„ „
Hordeum sativum JESS.	7		INOUYE, 1929.
LILIIFLORAE			
LILIACEAE			
Colchicum autumnale	7		FURLANI, 1904.
Lilium Martagon L.	12		SISA, 1929.
Lilium Martagon Maximowiczii REGEL	12		SISA, 1929.
Fritillaria persica L.	12		BAMBACIONI, 1928.
MICROSPERMAE			
ORCHIDACEAE			
Nigritella nigra RCHB.	19		CHIARUGI, 1929.
„ *rubra* RCHB.	19		„ „

[1]) Frequently 0—4 trivalents were found.

[2]) Irregularities occurred as members of a pair remained separate as univalents or united with another bivalent to form trivalents.

BIBLIOGRAPHY FOR SUPPLEMENT

BABCOCK, E. B. & HOLLINGSHEAD, L., 1929. — *Crepis reuteriana* and its chromosomes. Science 69; 356.

BAMBACIONI, V., 1928. — Ricerche sulla ecologia e sulla embriologia di *Fritillaria persica* L. Ann. di Bot. 18; 7—35, Pl. III—V.

BEHRE, K., 1929. — Physiologische und zytologische Untersuchungen über *Drosera*. Planta 7; 208—306.

CARANO, E., 1926. — Ulteriori osservazioni su *Euphorbia dulcis* L. in rapporto col suo comportamento apomittico. Ann. di Bot. 17; 50—79, Pl. I—II.

CHIARUGI, A., 1929. — Diploidismo con amfimissia e tetraploidismo con apomissia in una medesima specie *Nigritella nigra* RCHB. Bollett. Soc. Ital. Speriment 4; 659—661.

CHRISTOFF, M., 1929. — Cytological studies on some species hybrids of *Nicotiana*. Annuaire Univ. Sofia Facult. Agron. 7; 289—302, 1 Pl.

DAVIES, G. J., 1927. — The chromosome numbers in *Dactylis glomerata* (Cocksfoot). Nature 119; 236–237.

ELDERS, A. T., 1926. — Some pollination and cytological studies of sweet clover. Sci. Agr. 6; 360—365.

FRANCINI, E., 1927. — L'embriologia del *Cynanchum acutum* L. Nuovo Giorn. Bot. Ital. 34; 381—395, Pl. II.

FURLANI, J., 1904. — Zur Embryologie von *Colchicum autumnale* L. Oesterr. Bot. Zeitschr. 54; 318—324, 373—379.

GERHARD, K., 1929. — Genetische und zytologische Untersuchungen an *Oenothera grandiflora* AIT. Jenaische Zeitschr. Naturwissensch. 64; 283—338, Pl. XIV—XXIII.

GLISIC, L. M., 1928. — Zur Entwicklungsgeschichte der Solanaceen. Die Endospermbildung von *Datura Metel* L. Bull. Inst. Jard. Bot. Univ. Belgrade 1; 75—85.

HÅKANSSON, A., 1928. — Die Reduktionsteilung in den Samenanlagen einiger Oenotheren. Hereditas 11; 129—181.

HIRATA, K., 1929. — Cytological basis of the sex determination in *Cannabis sativa* L. Jap. Jour. Genet. 4; 198—201, Pl. IV—V.

INOUYE, C., 1929. — Studies on the development of chromosomes in *Hordeum*. Proc. Crop. Sci. Soc. Japan No. 5; 25—39, Pl. V.

KANNA, B., 1926. — On the inheritance of Balsam. Bot. Mag. Tokyo 40; 599—619.

KELLY, J. P. & WAHL, H. A., 1929. — Genetics of the genus *Phlox*. Penn. Agr. Exp. Sta. Bull. 230; 18.

KIHARA, H., 1929*a*. — The sex chromosomes of *Humulus japonicus*. Jap. Jour. Genet. 4; 55—63.

KIHARA, H., 1929*b*. — A case of linkage of sex-chromosomes and autosomes in the pollen mother cells of *Humulus japonicus*. Jap. Jour. Genet. 5; 73—80.

KIKUCHI, M., 1929. — Cytological studies of the genus *Linum* I. Jap. Jour. Genet. 4; 202—212, Pl. VI—VII.

KOBEL, F., 1927. — Ueber eine tetraploide (Gigas)-Form von *Primula malacoides* FRANCHET. Ber. Schweiz. Bot. Ges. 36; XXV—XXVI.

LA-COUR, L., 1929. — New fixatives for plant cytology. Nature 124; 127.

MESSERI, A., 1928. — Embriologia di „*Grevillea macrostachya*" „BRONGN. et GRIS." Nuovo Giorn. Ital. Bot. 34; 1037 — 1042, Pl. XIV.

MILOVIDOV, P. F., 1926. — Über einige neue Beobachtungen an den Lupinenknöllchen. Centralbl. Bakteriol. Parasitenk. Abt. II 68; 333—345, Pl. I—II.

MIYAJI, Y., 1929. — Studien über die Zahlenverhältnisse der Chromosomen bei der Gattung *Viola*. Cytologia 1; 28—58.

NISHIYAMA, I., 1929. — The genetics and cytology of certain cereals I. Morphological and cytological studies on triploid, pentaploid and hexaploid *Avena*-hybrids. Jap. Jour. Genet. 5; 1—48, Pl. I.

OKSIJUK, P., 1927. — Entwicklungs-geschichte der Zuckerrübe (*Beta vulgaris*). Bull. Jard. Bot. Kieff 5—6; 148—64, Pl. I—II.

OPPENHEIM, J. D. & FRANKEL, O. H., 1929. — Investigations into the fertilization of the „Jaffa-orange" I. Genetica 11; 369—374.

SCHÜRHOFF, P. N., 1929*a*. — Zytologische und genetische Untersuchungen an *Mentha* und ihre Bedeutung für die Pharmakognosie. Arch. Pharmaz. u. Ber. Deutsch Pharmaz. Ges. 267; 515—526.

SCHÜRHOFF, P. N., 1929*b*. — Über die systematische Stellung der *Pittosporaceae* COHN. Beitr. Biol. Pflanz. 17; 72—86, Pl. I.

SISA, M., 1929. — A list of chromosome numbers in vegetable crops. Jap. Jour. Genet. 5; 88—95.

SMITH, C. M., 1929. — Development of *Dionaea Muscipula* I. Flower and seed. Bot. Gaz. 87; 507—530, Pl. XX—XXIV.

SVESHNIKOVA, I. N., 1929. — *Vicia sativa* L. and *Vicia cracca* L. Ann. Timiriasev Agr. Acad. 4; 1—22.

SZTAJGERWALDÓWNA, M., 1929. — Quelques détails de la cinèse de maturation chez *Mercurialis annua* ♂. Acta Soc. Bot. Pol. 6; 335—340, Pl. XXI—XXII.

TUDA, M., 1929. — Vererbung der in der heterotypischen Kernteilung gebildeten Chromosomenringe bei *Oenothera*. Jap. Jour. Genet. 4; 115—116. (from Jap. Jour. Bot. 5; (26—27)).

VASILJEV, B., 1929. — On the cytology of speltoids. Bull. Bur. Genetics (Leningrad) 7; 31—39.

VUKOVIC, R. & GLISIC, L., 1929. — Evolution chromosomique en rapport avec le nucléole dans le *Gossypium Herbaceum*. Bull. Inst. & Jard. Bot. Univ. Belgrade 1; 97—105, Pl. V—VI.

WAKAKUWA, S., 1929. — Variation of chromosome number among F_2 and F_3 progenies in the crosses between two dwarf wheat plants. Jap. Jour. Genet. 4; 187—197, Pl. III.

CHROMOSOME NUMBERS IN ANGIOSPERMS IV

DICOTYLEDONEAE

	n	2n	
PIPERALES			
SAURURACEAE			
Houttuynia cordata [1].		94—98	OKABE, 1930.
GARRYALES			
GARRYACEAE			
Garrya elliptica	11		MEURMAN, 1930.
JUGLANDALES			
JUGLANDACEAE			
Juglans cinerea L.	16		WOODWORTH, 1930*c*.
„ *mandshurica* MAXIM. .	16		„ „
„ *nigra* L.	16		„ „
„ *regia* L.	16		„ „
„ *rupestris* ENGELM. . .	16		„ „
„ *Sieboldiana* var. *cordiformis* MAK.	16		„ „
× „ *notha* REHD. (*J. Sieboldiana* × *J. regia*) . .	16 [2]		„ „
Carya alba K. KOCH.	32		„ „
„ *cordiformis* K. KOCH. .	16		„ „
„ *glabra* SWEET.	32		„ „
„ *laciniosa* LOUD.	16		„ „
× „ *Laneyi* var. *chateaugayensis* SARG.	16 [3]		„ „
„ *ovalis* SARG.	32		„ „
„ *ovata* K. KOCH.	16		„ „
× *Pterocarya Rehderiana* SCHNEID. (*P. fraxinifolia* × *P. stenoptera*) . . .	16 [4]		„ „

[1]) Reduction division in the pollen-mother-cells was very irregular. In the embryo-sac mother-cell there were either many bivalents with some univalents or all the chromosomes appeared as univalents and no reduction of number followed.

[2]) Meiosis was very irregular.

[3]) Meiosis was not normal.

[4]) Meiosis was irregular.

FAGALES	n	2n	
BETULACEAE			
Carpinus betulus L.	8		WOODWORTH, 1930*b*; JARETZKY, 1930.
„ *betulus* var. *fastigiata* NICHOLS	32		WOODWORTH, 1930*b*.
„ *caroliniana* WALT.	8		„ „
„ *cordata* BL.	8 [1]		„ „
„ *japonica* BL.	8		„ „
„ *laxiflora* BL.	8		„ „
„ *orientalis* MILL.	8		„ „
„ *turczaninovii* HANCE	8		„ „
Ostrya carpinifolia SCOP.	8		„ „ ; JARETZKY, 1930.
„ *japonica* SARG.	8		WOODWORTH, 1930*b*.
„ *virginiana* K. KOCH	8		„ „
„ *virginiana* var. *glandulosa* SARG.	8		„ „
Ostryopsis davidiana DCNE.	8		„ „
Corylus americana MILL.	11		JARETZKY, 1930.
„ *avellana* L.	11		„ „
„ *maxima* MILL.	11		„ „
„ *rostrata* AIT. var. *mandshurica* MAXIM.	10 or 11		„ „
Betula humilis SCHR.	14		„ „
„ *lutea* MICHX. (from Minn.) [2]	42		WOODWORTH, 1930*b*.
„ *nana* L.	14		JARETZKY, 1930.
„ *papyrifera* var. *kenaica* HENRY	35		WOODWORTH, 1930*b*.
„ *papyrifera* var. *occidentalis* SARG.	42		„ „
„ *papyrifera* var *subcordata* SARG.	28		„ „
„ *pumila* var. *glandulifera* REGEL	28		„ „
„ *urticifolia* REGEL	28		JARETZKY, 1930.
„ *utilis* var. *prattii* BURK.	14		WOODWORTH, 1930*b*.
× „ *purpurii* SCHNEID. (*B. lutea* × *B. pumila* var. *glandulifera*)	45 [3]		„ „

[1]) Meiosis was very abnormal. Some of the chromosomes did not pair in diakinesis.

[2]) *Betula lutea* reported on by WOODWORTH, 1929*a* (see GAISER, 1930*b*) came from Massachusetts (U. S. A.)

[3]) Meiosis was very abnormal.

	n	2n	
BETULACEAE (continued)			
Alnus cordata DESF. var. *genuina* REGEL	21		JARETZKY, 1930.
Alnus glutinosa var. *vulgaris* SPACH.	14		„ „
Alnus incana MOENCH.	14		„ „
Alnus japonica SIEB. et ZUCC.	28 [1]		„ „
Alnus rubra BONG.	14		„ „
Alnus rugosa (DU ROI) SPRENG.		28 [2]	WOODWORTH, 1930*a*.
Alnus subcordata C. A. MEY	21 [3]		JARETZKY, 1930.
Alnus viridis (CHAIX.) DC.	14		„ „
FAGACEAE			
Fagus silvatica L.		24	„ „
Castanea sativa MILL.	12 [4]		„ „
„ *dentata* BORCKH.	12		„ „
QUERCUS			
Subgenus Lepidobalanus			
Quercus alba	12		SAX, H. J., 1930.
„ *alba* L.		12	FRIESNER, 1930.
„ *bicolor*	12		SAX, H. J. 1930.
„ *macrocarpa*	12±1		„ „ „ „
„ *macrocarpa* MICHX.		12	FRIESNER, 1930.
„ *mongolica*	12±1		SAX, H. J., 1930.
„ *montana*	12		„ „ „ „
„ *muhlenbergii*	12		„ „ „ „
„ *muhlenbergii* ENGEL [5].		12	FRIESNER, 1930.
Subgenus Erythrobalanus			
Quercus exacta	12		SAX, H. J., 1930.
„ *imbricaria*	12		„ „ „ „
× „ *Leana*	12±1		„ „ „ „
× „ *ludoviciana*	12±1		„ „ „ „
„ *palustris*	12		„ „ „ „
„ *palustris* DU ROI		24	GHIMPU, 1930.
× „ *velutina*	12±1		SAX, H. J., 1930.
„ *velutina* LAM.		12	FRIESNER, 1930.
QUERCUS (unclassified as to subgenus)			
Quercus borealis maxima ASHE [6])		12	FRIESNER, 1930.

[1]) Only 25 units were counted in metaphase, one unit supposedly consisting of 3 fused units.

[2]) This number was determined in the ovule where no reduction division was found to occur (embryos arising from parthenogenesis).

[3]) Meiotic divisions were more or less irregular.

[4]) Equatorial plates showing 10 and 11 chromosomes were explained as having been the result of fusion of chromosomes.

[5]) Mitotic chromosome behavior was somewhat abnormal.

[6]) Mitotic chromosome behavior was slightly abnormal.

	n	2n	
FAGACEAE (continued)			
Quercus (continued)			
Quercus cerris L.		24	GHIMPU, 1930; JARETZKY, 1930.
„ *coccifera* LINN.		24	GHIMPU, 1930.
„ *coccinea* MUENCH. [1]		12	FRIESNER, 1930.
„ *coccinea* WANGENH.	12		JARETZKY, 1930.
„ *Dalechampii* TEN.	12		„ „
„ *glandulifera* BL.	12 [2]		„ „
„ *ilex* LINN.		24	GHIMPU, 1930.
„ *Koehnii* (*Q. ilex* × *Q. sessilis*)		24 [3]	JARETZKY, 1930.
„ *Libani* OLIV.	12		„ „
„ *macranthera* FISCH. et MEY.	12		„ „
„ *marilandica* MUENCH.		12	FRIESNER, 1930.
„ *Michauxii* NUTT. [4]		12	„ „
„ *nigra* L.		24	JARETZKY, 1930.
„ *pontica* K. KOCH.	12 [2]		„ „
„ *prinoides* WILLD.		12	FRIESNER, 1930.
„ *Prinus* L.		12	„ „
„ *robur* L.	12		JARETZKY, 1930.
„ *sessilis* EHRH.	12		„ „
„ *suber* LINN.		24	GHIMPU, 1930.
URTICALES			
ULMACEAE			
Ulmus montana WITH.	14		KRAUSE, 1930.
MORACEAE			
Humulus japonicus S. et Z.	7+1$_3$ [5]	16, 17, 32 [6]	TUSCHNJAKOWA, 1930.
Dorstenia argentata HOOK.	14		KRAUSE, 1930.
„ *Barteri* BUR.	12		„ „
„ *contrajerva* L.	15		„ „
„ *convexa* DE WILD.	12		„ „
„ *multiformis* MIQ. var. *arifolia*	16		„ „
„ *multiformis* MIQ. var. *Ceratosanthes*	16		„ „

[1]) Mitotic chromosome behavior was somewhat abnormal.

[2]) Equatorial plates showing 10 and 11 chromosomes were explained as having been the result of fusion of chromosomes.

[3]) Judged by meiotic divisions where 13 or 14 chromosomes were found and it was thought that several univalent chromosomes were present.

[4]) See foot-note 6 page 122.

[5]) The trivalent chromosome is represented as a + b_1 + b_2.

[6]) Tetraploid cells occurred occasionally in the diploid plants.

	n	2n	
MORACEAE (continued)			
Dorstenia (continued)			
Dorstenia plumariaefolia FISCH. et MEY.	13		KRAUSE, 1930.
„ *Psilurus* WELW.	14(?)		„ „
„ *yambuyaensis* DE WILD.	12		„ „
Brosimum Alicastrum SW.		26	„ „
Ficus elastica ROXB.		26(?)	„ „
„ *panduraefolia* VILL.		26(?)	„ „
„ *Schlechteri*		26(?)	„ „
Cecropia peltata L.		26(?)	„ „
URTICACEAE			
Urtica caudata VAHL. (*Urtica membranacea* POIR.)	12	24	NEGODI, 1930.
Pellionia Daveauana BR.	13		KRAUSE, 1930.
Boehmeria biloba WEDD.		28(?)	„ „
Parietaria judaica L.	13		„ „
„ *officinalis* L.		14	„ „
„ *officinalis* L. var. *angustifolia* L.	7		„ „
POLYGONALES			
POLYGONACEAE			
Rumex acetosa ♂		15 [1]	ONO, 1930*a*.
„ *acetosa* ♀		14 [2]	„ „
„ *acetosa* (intersex.)		15 [3]	ONO, 1930*a*, *b*.
		22 [4]	„ „ „
		29 [5]	„ „ „
„ *acetosa* (offspring of triploids and intersexual plants)		15, 16, 20 [6]	„ „ „
„ *acetosella* (intersex.)	$20+1_1$	41(?)	ONO, 1930*b*.
„ *montanus* ♂		15 [1]	„ „
„ *montanus* ♀		14 [2]	„ „

[1]) The complex is written $15 = x + 2y + 12a$.

[2]) The complex is written $14 = 2x + 12a$.

[3]) The complex is written $15 = x + 2y + a' + 11a$. The a′ chromosome is one of a heteromorphic pair, apparent in certain division stages.

[4]) The complex is written $22 = 2x + 2y + 18a$ or $2x + 2y + a' + 17a$, of which those having the a′ chromosome show greater degrees of intersexualism. Of four other plants showing marked intersexualism the complex was $2x + 3y + a' + 16a$ or $2x + 2y + 3a' + 15a$.

[5]) The complex is written $29 = 3x + 2y + 24a$.

[6]) The complex is written $15 = x + 3y + 2a' + 9a$ or $2x + 13a$; $16 = x + 2y + 13a$; and $20 = 2x + y + 17a$.

	n	2n	
POLYGONACEAE (continued)			
Rumex (continued)			
Rumex montanus (intersex.) .		22 [1]	Ono, 1930*b*.
„ *montanus* Desf. ♂. . .		15 [2]	Takenaka, 1930.
„ *montanus* Desf. ♀ . .		14 [2]	„ „
„ *papilio* Coss. et Bal. .	9		Ono, 1930*c*.
„ *scutatus* var. *typicus* . .	20		Fikry, 1930.
CENTROSPERMAE			
CHENOPODIACEAE			
Beta patellaris.	9		Bleier, 1930*b*.
„ *vulgaris*	9		„ „
	9	18	Levine, 1930.
„ *vulgaris* (Crown Gall tissue)		18, 36, 72 [3]	„ „
PORTULACACEAE			
Portulaca grandiflora Lindl. .	9		Tjebbes, 1930.
CARYOPHYLLACEAE			
Silene inflata Smith		24 [4]	Blackburn & Boult, 1930.
„ *tatarica* Pers.		24 [4]	„ „ „ „
Vaccaria segetalis (Neck.) Garcke	15	30	„ „ „ „
Dianthus allwoodii Hort. . .		90	Shibukawa, 1930.
„ *Armeria*		30	Ishii, 1930.
„ *atrorubens*		90	„ „
„ *barbatus*		30	„ „
„ *chinensis*.		30	„ „
„ *chinensis* L.	15	30	Shibukawa, 1930.
„ *compactus*		90	Ishii, 1930.
„ *cruentus*		30	„ „
„ *dentosus*		30	„ „
„ *erythrocoreus*		30	„ „
„ *fragrans*		90	„ „
„ *Hoelzeri*		90	„ „
„ *japonicus*		30	„ „
„ *laciniatus*		60	„ „
„ *latifolius* Hort. . .		60	Shibukawa, 1930.
„ *liburnicus*		90	Ishii, 1930.
„ *orbelicus*		90	„ „

[1]) The complex is written 22 = 2x + 2y + 18a.

[2]) At heterotypic metaphase 6 gemini + 1 tripartitic chromosome were observed. Thus the complex is written 2n ♂ = 12a + x + Y_1 + Y_2; 2n ♀ = 12a + 2x.

[3]) Tetraploid cells were more numerous than octoploid cells, but diploid cells were the most numerous.

[4]) By figure of somatic plate from root-tip.

	n	2n	
CARYOPHYLLACEAE (continued)			
Dianthus (continued)			
Dianthus pallens		90	ISHII, 1930.
„ *petraeus*		90	„ „
„ *pubescens*		90	„ „
„ *racemosus*		90	„ „
„ *squarrosus*		90	„ „
„ *subfastigiatus* . . .		30	„ „
„ *sylvestris*		30	„ „
„ *Velenowskyi*		30	„ „
„ *versicolor*		90	„ „
„ *wimmeri*		60	„ „
SAPONARIA [1])			
I. Saponariella			
1. *Smegmathamnium*			
Saponaria caespitosa D.C.	14	28	BLACKBURN & BOULT, 1930.
„ *lutea* L. . . .		28	„ „ „ „
„ *Pumilio* FENZL.		28	„ „ „ „
2. *Kabylia*			
Saponaria glutinosa BIEB.		28	„ „ „ „
3. *Bootia*			
Saponaria calabrica GUSS.	14	28	„ „ „ „
„ *ocymoides* L. .	14		„ „ „ „
„ *officinalis* L. .	14	28	„ „ „ „
„ *pulchella* hybrid	14		„ „ „ „
II. Saporhizaea			
2. *Silenoides*			
Saponaria cerastioides FISCH.	14	28	„ „ „ „
RANALES			
RANUNCULACEAE			
Clematis virginiana	8		LINDSAY, 1930.
BERBERIDACEAE			
Diphylleia Grayi FR. SCHOM. .		12	MIJAVI, 1930*b*.
Podophyllum pleianthum HANCE.		12	„ „
Nandina domestica THUNB. . .		20	„ „
Epimedium macranthum MORR. et DECNE. var. *violaceum* FRANCH.		12	„ „
Ranzania japonica T. ITO . .		14	„ „
Jeffersonia dubia MAXIM. . .		12	„ „
MENISPERMACEAE			
Menispermum canadense . . .	26		LINDSAY, 1930.

[1]) Arrangement is according to SIMMLER (1910).

	n	2n	
CALYCANTHACEAE			
Calycanthus	12	24	BROFFERIO, 1930.
RHOEADALES			
PAPAVERACEAE			
Eschscholtzia californica . . .	6		LAWRENCE, 1930.
„ *molle*	8		„ „
Papaver Rhoeas	7		„ „
Corydalis cava	8		„ „
CRUCIFERAE			
Ionopsidium acaule (DESF.) REICHB.	12		CORTI, 1930*b*.
„ *Savianum* (CAR.) BALL. ex CARUEL	16		„ „
Iberis pinnata	8		LAWRENCE, 1930*b*.
Brassica alba RABH. (white mustard) (from U.S.A. and England)	12		NAGAI & SASAOKA, 1930*a*.
Brassica alba RABH. (*B. nigra*) (from Switzerland)	12		„ „ „
Brassica alba RABH. (*Sinapis alba*) (from Germany) . . .	12		„ „ „; 1930*b*.
Brassica arvensis RABH. (*B. arvensis*) (from U.S.A.) . . .	9		„ „ 1930*a*.
Brassica arvensis RABH. (*Sinapis arvensis*) (from Germany)	9		„ „ „
Brassica campestris L.		10	KARPECHENKO, 1930.
„ *campestris* L. var. *afghanica*	10		NAGAI & SASAOKA, 1930*b*.
„ *campestris* L. var. *altaica*	10		„ „ „
„ *campestris* L. var. *caucasica*	10		„ „ „
„ *campestris* L. var. *kabulica*	10		„ „ „
„ *campestris* L. var. *vulgaris*	10		„ „ „
„ *campestris* L. (Sawi Biji)	10		„ „ „
„ *campestris* L. (Tambana) (from Japan) . .	10		„ „ 1930*a*.
„ *campestris* L. (*B. glauca*)	10		„ „ 1930*b*.
„ *campestris* L. (two other types)	10		„ „ „
„ *carinata* BRAUN. . .	18		„ „ „

CRUCIFERAE (continued)	n	2n	
Brassica (continued)			
	17		MORINAGA & FUKUSHIMA, 1930.
	17	34	KARPECHENKO, 1930.
Brassica chinensis L. (Chang-Keng-pai-tsai) (from China)	10		NAGAI & SASAOKA, 1930*a*.
„ *chinensis* L. (Chung-ming-pai-tsai) (from China)	10		„ „ „
„ *chinensis* L. (Huaian Pai-tsai) (from China)	10		„ „ „
„ *chinensis* L. (Kun-ping-pai-tsai) (from China)	10		„ „ „
„ *chinensis* L. (Peking Yu-tsai) (from China)	10		„ „ „
„ *chinensis* L. (Mustard Chinese White) (from U.S.A.)	10		„ „ „
„ *chinensis* L. (Sawi Daun) (from Malay)	10		„ „ „
„ *chinensis* L. (Sawi Puteh) (from Malay) .	10		„ „ „
„ *chinensis* L. (Sawi Puteh Daun Kechil) (from Malay) . . .	10		„ „ „
„ *chinensis* L. (Seppaku Taisai) (from Japan).	10		„ „ „
„ *chinensis* L. (Tai-hu-ching-tsai) (from China)	10		„ „ „
„ *chinensis* L. (Tai-tou-ching-tsai) (from China)	10		„ „ „
„ *chinensis* L. (Wu-chin-pai-tsai) from China)	10		„ „ „
„ *juncea* Coss. (Chinese Mustard) (from U. S.A.)	13		„ „ „
„ *juncea* Coss. (Cha-tsai) (from China) . . .	18		„ „ „
„ *juncea* Coss. (Ching-tsai) (from China) .	18		„ „ „ ; SASAOKA, 1930.

CRUCIFERAE (continued)	n	2n	
Brassica (continued)			
Brassica juncea Coss. (Hagarashina) (from Japan)	18		NAGAI & SASAOKA, 1930*a*.
„ *juncea* Coss. (Hsiieh-chieh) (from China).	18		„ „ „
„ *juncea* Coss. (Hsiieh-li-hung) (from China)	18		„ „ „
„ *juncea* Coss. (Hua-chieh) (from China).	18		„ „ „
„ *juncea* Coss. (Huang-chieh-tsai) (from China)	18		„ „ „
„ *juncea* Coss. (Pai-chieh) (from China).	18		„ „ „
„ *juncea* Coss. (Peking-Hsiieh-li-hung) (from China)	18		„ „ „
„ *juncea* Coss. (Peking-Hsiao-chieh-tsai) (from China). . . .	18		„ „ „
„ *juncea* Coss. (Pi-chieh) (from China) . . .	18		„ „ „
„ *juncea* Coss. (Sawi Hitam) (from Malay) .	18		„ „ „
„ *juncea* Coss. (Tai-chieh-tsai) (from China)	18		„ „ „ : SASAOKA, 1930.
„ *juncea* var. *crispifolia* BAILEY (Fordhook Fancy) (from U.S.A.)	18		NAGAI & SASAOKA, 1930*a*.
„ *juncea* var. *crispifolia* BAILEY (Giant Southern Curled) (from U.S.A.)	18		„ „ „
„ *juncea napiformis* BAILEY (Chêng-Kung-chieh) (from China) .	18		„ „ „
„ *juncea napiformis* BAILEY (Peking-chieh-tsai-Ko-chu) (from China)	18		„ „ „

CRUCIFERAE (continued)	n	2n	
Brassica (continued)			
Brassica juncea napiformis BAILEY (Tai-tou-tsai) (from China) . . .		18	NAGAI & SASAOKA, 1930*a*.
„ *napus* L.		18	KARPECHENKO, 1930.
		19	MORINAGA & FUKUSHIMA, 1930.
„ *napus* var. *Napobrassica* REICHB. (*B. napus esculenta* DC.) (from Russia) . . .		19	NAGAI & SASAOKA, 1930*a*.
„ *napus* var. *napobrassica* REICHB. (Imperial Purple Rutabaga) (from U.S.A.) . . .		19	„ „ „
„ *napus* var. *napobrassica* REICHB. (Rutabaga)		19	SASAOKA, 1930.
„ *napus* var. *napobrassica* REICHB. (Yellow Golden) (from England)		19	NAGAI & SASAOKA, 1930*a*.
„ *napus* L. var. *oleifera* DC.		19	MORINAGA & FUKUSHIMA, 1930.
„ *napus* L. var. *oleifera* DC. (*B. napus oleifera annua*) (from Russia)		19	NAGAI & SASAOKA, 1930*a*.
„ *napus* L. var. *oleifera* DC. (*B. napella* CHAIX. „Kochosen" (from Japan) . . .		19	„ „ „
„ *napus* L. var. *oleifera* DC. (Favorite Kale) (from England) . .		19	„ „ „
„ *napus* L. var. *oleifera* DC. (Ôchosen 2 types) (from Japan) .		19	„ „ „ ; SASAOKA, 1930.
„ *napus* L. var. *oleifera* DC. (Rape) (from England and Germany)		19	NAGAI & SASAOKA, 1930*a*; SASAOKA, 1930.
„ *narinosa* BAILEY (Piao erh-tsai) (from China)		10	NAGAI & SASAOKA, 1930*a*.

CRUCIFERAE (continued)	n	2n	
Brassica (continued)			
Brassica nigra Koch (*B. nigra*) (from Germany) . .	8	Nagai & Sasaoka, 1930*a*.	
„ *nigra* Koch (*B. nigra*, 2 types) (from Russia)	8	„ „ „	
„ *nigra* Koch (Brown Mustard) (from England)	8	„ „ „	
„ *nigra* Koch (Noire de Sicile) (from France)	8	„ „ „	
„ *nipposinica* Bailey (Nakate Mibuna) (from Japan) . . .	10	„ „ „	
„ *nipposinica* Bailey (Nakate Sensuji-Kyôna) (from Japan) .	10	„ „ „	
„ *nipposinica* Bailey (Okute Mibuna) (from Japan)	10	„ „ „	
„ *nipposinica* Bailey (Okute Sensujikyóna) (from Japan) . . .	10	„ „ „ ; Sasaoka, 1930.	
„ *nipposinica* Bailey (Wase Mibuna) (from Japan)	10	Nagai & Sasaoka, 1930*a*.	
„ *oleracea* var. *acephala* DC. (Collard) (from England)	9	„ „ „	
„ *oleracea* var. *acephala* DC. (Chieh-lan) (from China)	9	„ „ „	
„ *oleracea* var. *acephala* DC. (Extra Curled Scotch Kale) (from England)	9	„ „ „	
„ *oleracea* var. *acephala* DC. (Sawi Hitan Tuah) (from Malay) . .	9	„ „ „	
„ *oleracea* var. *acephala* DC. (*B. alboglabra* Bailey)	9	„ „ 1930*b*.	

CRUCIFERAE (continued)	n	2n	
Brassica (continued)			
Brassica oleracea var. *botrytis* L. (Michaelmas White) (from England) .	9		NAGAI & SASAOKA, 1930*a*.
„ *oleracea* var. *capitata* L. (Baby Head) (from U.S.A.)	9		„ „ „
„ *oleracea* var. *capitata* L. (Denmark Market) (from England) . .	9		„ „ „
„ *oleracea* var. *capitata* L. (Toyoda-wase) (from Japan) . . .	9		„ „ „
„ *oleracea* var. *gemmifera* ZENKER (Holborn Exhibition) (from England)	9		„ „ „
„ *oleracea* var. *gongylodes* L. (Early White) (from England) . .	9		„ „ „
„ *pekinensis* RUPR. . .	10		KARPECHENKO, 1930.
„ *pekinensis* RUPR. (Chihli Pai-tsai) (from China)	10		NAGAI & SASAOKA, 1930*a*; SASAOKA, 1930.
„ *pekinensis* RUPR. (Chinko Undai) (from China)	10		NAGAI & SASAOKO, 1930*a*.
„ *pekinensis* RUPR. (Hakukei Santôsai) (from Japan)	10		„ „ „
„ *pekinensis* RUPR. (Harumaki Kekkyu-hakusai) (from Japan) .	10		„ „ „
„ *pekinensis* RUPR. (Hua-hsin-tsai) (from China)	10		„ „ „
„ *pekinensis* RUPR. (Kawachi Undai) (from Japan)	10		„ „ „
„ *pekinensis* RUPR. (Kekkyu Sauto-hakusai) (from Japan) . . .	10		„ „
„ *pekinensis* RUPR. (Ô-			

CRUCIFERAE (continued)	n	2n	
Brassica (continued)			
gomba Santôsai) (from Japan) . . .	10		NAGAI & SASAOKA, 1930*a*.
Brassica pekinensis RUPR. (Peking Hsiao-pai-tsai) (from China) . . .	10		,, ,, ,,
,, *pekinensis* RUPR. (Peking Tai-pai-tsai) (from China) . . .	10		,, ,, ,,
,, *pekinensis* RUPR. (Sawi Daunca) (from Malay)	10		,, ,, ,,
,, *pekinensis* RUPR. (Sawi Puteh Daun Besar) (from Malay) .	10		,, ,, ,,
,, *pekinensis* RUPR. (Tai-pai-tsai) (from China)	10		,, ,, ,, ; SASAOKA, 1930.
,, *pekinensis* RUPR. (Untai, 3 types) (from China)	10		NAGAI & SASOAKA, 1930*a*.
,, *pekinensis* RUPR. (Yasu Undai) (from Japan)	10		,, ,, ,,
,, *rapa* L. (*B. campestris*) (from Russia) .	10		,, ,, ,,
,, *rapa* L. (Habirona) (from Japan) . . .	10		,, ,, ,,
,, *rapa* L. (Hatakena) (from Japan) . . .	10		,, ,, ,,
,, *rapa* L. (Hikabu) (from Japan)	10		,, ,, ,,
,, *rapa* L. (Hinona) (from Japan)	10		,, ,, ,,
,, *rapa* L. (Imaichi Kaba) (from Japan) . .	10		,, ,, ,,
,, *rapa* L. (Kisona) (from Japan)	10		,, ,, ,,
,, *rapa* L. (Komatsna) (from Japan) . . .	10		,, ,, ,,
,, *rapa* L. (Kurona) (from Japan)	10		,, ,, ,,
,, *rapa* L. (Man-Ching) (from China) . . .	10		,, ,, ,,

CRUCIFERAE (continued)	n	2n	
Brassica (continued)			
Brassica rapa L. (Nozawana) (from Japan) . . .	10		NAGAI & SASAOKA, 1930*a*.
„ *rapa* L. (Purple-top Mammoth) (from England)	10		„ „ „
„ *rapa* L. (Shôgoin Kabu) (from Japan) . .	10		„ „ „ ; SASAOKA, 1930.
„ *rapa* L. (Suigukina) (from Japan) . . .	10		NAGAI & SASAOKA, 1930*a*.
Brassica hybrids:			
Brassica juncea Coss. (Ching-tsai) × *B. napus* L. var. *napobrassica* REICHB. (Rutabaga)	$10+\frac{17_I}{2}$		SASAOKA, 1930.
„ *juncea* Coss. (Ching-tsai) × *B. napus* L. var. *napobrassica* REICHB. (Rutabaga) F_2	$12+\frac{9_I}{2}$, $12+\frac{10_I}{2}+1\frac{1}{2}$, $10+\frac{12_I}{2}$		„ „
„ *napus* L. var. *napobrassica* REICHB. (Rutabaga) × *B. juncea* Coss. (Tai-chieh-tsai)	$10+\frac{17_I}{2}$		„ „
„ *napus* L. var. *napobrassica* REICHB. (Rutabaga) × *B. napus* L. var. *oleifera* DC. (Ochosen) . . .	19		„ „
Brassica napus L. var. *napobrassica* REICHB. (Rutabaga) × *B. nipposinica* BAILEY (Okute sensujikyôna)	$10+\frac{9_I}{2}$		„ „

CRUCIFERAE (continued)	n	2n	
Brassica hybrids (continued)			
Brassica napus L. var. *napobrassica* REICHB. (Rutabaga) × *B. pekinensis* RUPR. (Taipsai-tsai)	$10+9_{\frac{1}{2}}$		SASAOKA, 1930.
„ *napus* L. var. *oleifera* DC. (Ochosen) × *B. napus* L. var. *oleifera* DC. (Rape)	19		„ „
„ *napus* L. var. *oleifera* DC. (Ochosen) × *B. rapa* L. (Shogoin-Kabu) F	$10+9_{\frac{1}{2}}$		„ „
„ *napus* L. var. *oleifera* DC. (Ochosen) × *B. rapa* L. (Shogoin-Kabu) F_2	$\frac{12—20}{2}$		„ „
„ *napus* L. var. *oleifera* DC. (Ochosen) × *B. pekinensis* RUPR. (Chili-pai-tsai) F_2 one plant	$11+9_{\frac{1}{2}}$		„ „
„ *pekinensis* RUPR. (Chili-pai-tsai) × *B. napus* L. var. *oleifera* DC. (Ochosen)	$10+9_{\frac{1}{2}}$		
Raphanus raphanistrum	9	18	KARPECHENKO, 1930.
„ *sativus* L. (Indian radish)	9		SUTARIA, 1930.
Raphanobrassica (*Raphanus sativus* L. × *Brassica oleracea* L.	18	36	KARPECHENKO, 1930.
Raphanobrassica × *Brassica campestris*		28	„ „
Raphanobrassica × *Brassica carinata*		35	„ „
Raphanobrassica × *Brassica napus*		36	„ „

	n	2n	
CRUCIFERAE (continued)			
Raphanobrassica × *Brassica pekinensis*		26	KARPECHENKO, 1930.
Raphanobrassica × *Raphanus raphanistrum*		27	„ „
Bursa grandiflora	8		LAWRENCE, 1930.
Cardamine pratensis	15 [1])		„ „
Lobularia maritima	12		„ „
Hesperis tristis	14		„ „
Matthiola bicornis D.C.		14	MANTON, 1930.
„ *fenestralis* R. Br.		14	„ „
„ *odoratissima* R. Br.		12	„ „
„ *parviflora* R. Br.		14	„ „
„ *sinuata* R. Br.		14	„ „
„ *tatarica* D.C.		12	„ „
„ *Thessala* BOISS. et O.		12	„ „
ROSALES			
SAXIFRAGACEAE			
Saxifraga granulata	ca. 16		WHYTE, 1930.
„ *rosacea*	ca. 16		„ „
„ *rosacea* × *S. granulata* F_2 = *S. potternensis*	32—36		„ „
ROSACEAE			
Pyrus communis	17		LAWRENCE, 1930.
„ *floribunda* KIRCHN.		34	DARLINGTON & MOFFETT, 1930.
„ *malus*	17, 51/2		LAWRENCE, 1930.
Pyrus malus L. varieties:			
Akero [2])	17		HEILBORN, 1930.
Allington pippin		34	DARLINGTON & MOFFETT, 1930.
Annie Elizabeth		34	„ „ „ „
Baldwin	51/2		„ „ „ „
Beauty of Bath		34	„ „ „ „
Blenheim Orange		51	„ „ „ „
Bramley's Seedling		51	„ „ „ „
„ „ (seedlings) [3])		38–41, 43 46, 47	„ „ „ „
Carlisle pippin		34	„ „ „ „

[1]) The number 16 as published in Genetica was corrected by LAWRENCE in a reprint received from him.

[2]) The buds of cut twigs placed in water and subjected to various temperatures (10° to 35°) showed varying numbers of univalent chromosomes.

[3]) Chromosome numbers of 17 seedlings obtained from open pollination of Bramley's Seedling were obtained from their root-tips.

ROSACEAE (continued)	n	2n	
Pyrus malus L. varieties (continued)			
Cox's orange pippin		34	DARLINGTON & MOFFETT, 1930.
Cox's Pomona		34	„ „ „ „
„ „ [1]	17		HEILBORN, 1930.
Crimson Bramley		51	DARLINGTON & MOFFETT, 1930.
Duchess Favorite		34	„ „ „ „
Early Victoria		34	„ „ „ „
Genet Moyle		51	„ „ „ „
Grenadier		34	„ „ „ „
Irish Peach		34	„ „ „ „
Kentish		34	„ „ „ „
Keswick Codlin		34	„ „ „ „
Lane's Prince Albert		34	„ „ „ „
Lord Derby		34	„ „ „ „
Manx Codlin		34	„ „ „ „
Newton Wonder		34	„ „ „ „
Northern Spy		34	„ „ „ „
Odlins		34	„ „ „ „
Reinette Zuccamaglio		34	„ „ „ „
Ribston pippin	51/2		„ „ „ „
Rival		34	„ „ „ „
Sävstaholm [1]	17		HEILBORN, 1930.
Weisser Astrachan [1]	17		„ „
Winter Magetin		34	DARLINGTON & MOFFETT, 1930.
Worcester Pearmain		34	„ „ „ „
Doucin (Malling Type VI)		34	„ „ „ „
Jaune de Metz (Malling Type IX)		34	„ „ „ „
Nonsuch (Malling Type VI)		34	„ „ „ „
Old English Broadleaf Paradise (Malling stock Type I)		34	„ „ „ „
Pyrus Ringo L.		34	„ „ „ „
Fragaria americana alba (PORTER)	7 [2]		ICHIJIMA, 1930.
„ *bracteata* HELLER	7 [2]		„ „
„ *californica* CHAM. et SCHLECHT.	7 [2]		„ „
„ *chilocnsis*	28		SCHIEMANN, 1930.
		56	EAST, 1930*a*.

[1] See foot-note 2 page 136.

[2] In this species one pair of chromosomes sometimes passed to the poles in early metaphase before the other chromosomes had started to separate („precursory chromosomes"). Non-disjunction of one pair often gave rise to different numbers of chromosomes in the two daughter nuclei. Doubling of the chromosome number also occurred.

ROSACEAE (continued)	n	2n	
Fragaria (continued)			
Fragaria chiloensis L.	28 [1]		ICHIJIMA, 1930.
„ *chiloensis* var. *Chesapeake*	28 [1]		„ „
„ *collina*	7		SCHIEMANN, 1930; RUDLOFF, 1930*a*.
„ *collina* EHRH.	7 [2]	14	ICHIJIMA, 1930.
„ *Daltoniana*	7		SCHIEMANN, 1930.
„ *elatior*	21		„ „
	21 [3]	42	KIHARA, 1930.
„ *elatior* EHRH.	21 [4]	42	ICHIJIMA, 1930.
„ *glauca* WATSON	28 [1]		„ „
„ *grandiflora*	28		SCHIEMANN, 1930.
		56	KIHARA, 1930.
„ *Hagenbachiana*	7		SCHIEMANN, 1930; RUDLOFF, 1930*a*.
„ *maxima*	7 [2]		ICHIJIMA, 1930.
„ *monophylla*	7		SCHIEMANN, 1930.
„ *nilgerrensis* SCHLECHT	7 [5]		ICHIJIMA, 1930.
„ *vesca*	7		SCHIEMANN, 1930; EAST, 1930*b*.
		14	EAST, 1930*a*.
„ *vesca* L.	7 [5]		ICHIJIMA, 1930.
„ *vesca* (?)	7		RUDLOFF, 1930*a*.
„ *vesca* (hybrid)	7		SCHIEMANN, 1930.
„ *vesca* var. *rosea* ROSTRUP	7 [5]		ICHIJIMA, 1930.
„ *virginiana*	28		SCHIEMANN, 1930; RUDLOFF, 1930*a*; EAST, 1930*b*.
		56	EAST, 1930*a*.
„ *virginiana* DUCHESNE	28 [6]		ICHIJIMA, 1930.
„ sp. „*Schöne Meissnerin*"	7		RUDLOFF, 1930*a*.
„ sp. (429) (white fruited from Hawaii)	7 [5]		ICHIJIMA, 1930.

[1]) Non-disjunction as well as the precursory behavior of a pair of chromosomes was frequently observed. Sometimes 29 chromosomes were counted at early diakinesis.

[2]) In this species one pair of chromosomes was smaller than the other six pairs and frequently failed to divide at metaphase, passing to either pole without separation of the two chromosomes.

[3]) In the embryo-sac-mother-cell division of female plants one pair of heterochromosomes (the W Z pair) was distinguishable.

[4]) Non-disjunction and lagging of chromosomes was observed in this species. There were present chromosomes of two different shapes.

[5]) See foot-note 2 page 137.

[6]) The chromosome behavior was much more regular in this species than in the other tetraploid species.

ROSACEAE (continued)	n	2n	
Fragaria (continued)			
Fragaria sp. (F. P. I. 64856) (seeds from Hingan, Manchuria)	7		ICHIJIMA, 1930
Fragaria hybrids:			
Fragaria americana alba × *F. vesca* var. *rosea* F_1	7 [1])		„ „
„ (*alba* × *rosea*) × *F. chiloensis* (Point Arena Beach).	7		„ „
„ *californica* × *F. chiloensis* (P.A.B.) F_1 .	$7+2\frac{1}{2}$	35	„ „
„ *chiloensis* (P.A.B.) × *F. bracteata* F_1 . . .		35	„ „
„ *chiloensis* (P.A.B.) × *F. collina* F_1. . . .		35	„ „
„ *chiloensis* (P.A.B.) × *F. maxima* F_1 . . .	$7+2\frac{1}{2}$		„ „
„ *chiloensis* (P.A.B.) × *F. nilgerrensis* F_1. .		35	„ „
„ *chiloensis* (P.A.B.) × *F. sp.* (F.P.I.) F_1. .	$7+2\frac{1}{2}$	35	„ „
„ *collina* × *F. maxima* F_1		14	„ „
„ *collina* × *F. nilgerrensis* F_1		14	„ „
„ *collina* × *F. vesca* . .	7		RUDLOFF, 1930*a*.
„ *elatior* × *F. bracteata* F_1		42	ICHIJIMA, 1930*a*.
„ *elatior* × *F. nilgerrensis* F_1		42	„ „
„ *grandiflora* × *F. elatior*	ca. 28 [2]) units	49	KIHARA, 1930.
„ *grandiflora* × *F. Hagenbachiana*	35		SCHIEMANN, 1930.
„ *grandiflora* × *F. vesca*	$14+7\frac{1}{2}$		RUDLOFF, 1930*a*.
„ *Hagenbachiana* × *F. grandiflora*	35		SCHIEMANN, 1930.

[1]) Non-disjunction was occasionally observed.
[2]) The number of univalents was variable.

ROSACEAE (continued)	n	2n	
Fragaria hybrids (continued)			
Fragaria maxima × *F. collina* F_1 (3 types)		14	ICHIJIMA, 1930.
„ *nilgerrensis* × *F. collina* F_1		14	„ „
„ *nilgerrensis* × *F. Duchesnea* F_1		14	„ „
„ *nilgerrensis* × *F. elatior* F_1		14	„ „
„ *nilgerrensis* × *F. sp.* (429) F_1		14	„ „
„ (*rosea* × *alba*) × *F. elatior*	7	14	„ „
„ (*rosea* × *alba*) × *F. virginiana*		35	„ „
„ (*rosea* × *alba*) × *F. virginiana* (one exceptional plant)		56	„ „
„ *vesca* × *F. americana alba* F_1	7 [1]		„ „
„ *vesca* × *F. chiloensis*	7		RUDLOFF, 1930*a*.
„ *vesca* × *F. virginiana*	7		„ „
		35	EAST, 1930*b*.
„ *vesca* × *F. virginiana* (one plant)		14	„ „
„ (*vesca* × *F. vesca* F_1) × *F. chiloensis*		14 [2]	„ 1930*a*.
„ *vesca rosea* × *F. collina* F_1		14	ICHIJIMA, 1930.
„ (*vesca rosea* × *collina*) × *F. vesca rosea* (large and dwarf)		14	„ „
„ (*virginiana* × *glauca*) × *F. collina*	$7+2\frac{1}{2}$		„ „
„ sp. (429) × *F. americana alba* F_1	7		„ „
„ sp. (429) × *F. collina* F_1		14	„ „
„ sp. (429) × *F. elatior* F_1	7	14	„ „

[1]) Non-disjunction and a pair of precursory chromosomes were occasionally observed.

[2]) Twenty-four such plants may have been produced through division of vegetative cells or through induced parthenogenesis.

ROSACEAE (continued)	n	2n	
Fragaria hybrids (continued)			
Fragaria sp. (429) × *F. maxima* F_1		14	ICHIJIMA, 1930.
„ sp. (429) × *F. nilgerrensis* F_1		14	„ „
„ sp. (429) × *F.* sp. (F.P.I.) F_1	7 [1])		„ „
POTENTILLA [2])			
Section I. Potentillae Trichocarpae			
Fruticosae			
Potentilla fruticosa		14	SHIMOTOMAI, 1930*a*, *b*.
Tridentatae			
Potentilla tridentata		28	„ „ „
Speciosae			
Potentilla speciosa		14	„ „ „
Nitidae			
Potentilla alchimilloides		14	„ „ „
Crassinerviae			
Potentilla valderia		14	„ „ „
Section II. Potentillae Gymnocarpae			
Subsect. A. Closterostylae			
Rupestres			
Potentilla calycina		14	„ „ „
„ *glandulosa*		14	„ „ „
„ *glandulosa* var. *fissa*		14	„ „ „
„ *glandulosa* var. *glutinosa*		14	„ „ „
„ *glandulosa* var. *Wrangelliana*		14	„ „ „
„ *rupestris*		14	„ „ „
Subsect. B. Conostylae			
Multifidae			
Potentilla bipinnatifida		42	„ „ „
„ *multifida*		42	„ „ „
„ *pennsylvanica*		28	„ „ „
Graciles			
Potentilla crinita		84	„ „ „
„ *flabelliformis*		70	„ „ „
„ *gracilis*		70	„ „ „
„ *Hippiana*		42	„ „ „
„ *megalantha*		70	„ „ „

[1]) Non-disjunction was occasionally observed.
[2]) Classification is according to WOLF (1908).

ROSACEAE (continued)	n	2n	
Potentilla (continued)			
Subsect. B. (continued)			
Haematochroae			
Potentilla argyrophylla		56	SHIMOTOMAI, 1930*a*, *b*.
„ *atrisanguinea*		56	„ „ „
„ *haematochrus*		112	„ „ „
„ *nepalensis*		42	„ „ „
„ *sibthorpiana*		98	„ „ „
Niveae			
Potentilla nivea		70	„ „ „
Argenteae			
Potentilla argentea		42	„ „ „
„ *canescens*		42	„ „ „
„ *canescens* var. *inciso-serrata*		42	„ „ „
„ *canescens* var. *Typica*		42	„ „ „
„ *dealbata*		42	„ „ „
„ *Meyeri*		42	„ „ „
Collinae			
Potentilla collina		42	„ „ „
„ *Sommieri*		42	„ „ „
„ *sordida*		42	„ „ „
Rectae			
Potentilla hirta		28	„ „ „
„ *laciniosa*		28	„ „ „
„ *recta*		42	„ „ „
„ *recta* var. *Herbichii*		42	„ „ „
„ *recta* var. *obscura* f. *fallacina*		42	„ „ „
„ *taurica* var. *Nicicii*		42	„ „ „
„ *transcaspia*		42	„ „ „
Rivales			
Potentilla Dombeyi		42	„ „ „
„ *intermedia*		28	„ „ „
„ *supina*		28	„ „ „
Persicae			
Potentilla nevadensis		28	„ „ „
Grandiflorae			
Potentilla Buccoana		28	„ „ „
„ *pyrenaica*		28	„ „ „
„ *umbrosa*		70	„ „ „
Chrysanthae			
Potentilla chrysantha		42	„ „ „
„ *chrysantha* var. *normalis*		42	„ „ „
„ *thuringiaca*		42	„ „ „

ROSACEAE (Continued)	n	2n	
Potentilla (continued)			
Subsect. C. Gomphostylae			
Aureae			
Potentilla alpestris		42	SHIMOTOMAI, 1930*a*, *b*.
„ *gelida*		42	„ „ „
„ *velutina*		42	„ „ „
Fragarioides			
Potentilla Freyniana		14	„ „ „
Tormentillae			
Potentilla reptans		28	„ „ „
Rosa			
Section Caninae			
Subsection vestitae			
Rosa tomentosa var. *Richardsoniana* HARRISON var. nov.		35	HARRISON, J. W. H., 1930.
Section Spinosissimae			
Rosa spinosissima var. *rivalis* HARRISON var. nov.		28	„ „ „ „ „
Wild roses of Western U.S.A.			
Group Rosa Woodsii LINDL.			
Rosa adenosepala		14	ERLANSSON, 1930.
„ *arizonica*		14	„ „
„ *Fendleri*		14	„ „
„ *granulifera*		14	„ „
„ *gratissima*		14	„ „
„ *hypoleuca*		14	„ „
„ *Macounii*		14	„ „
„ *mohavensis*		14	„ „
„ *neomexicana*		14	„ „
„ *pyrifera*		14	„ „
„ *salicetorum*		14	„ „
„ *ultramontana*		14	„ „
„ *Woodsii*		14	„ „
Group Rosa pisocarpa A. GRAY			
Rosa anacantha		14	„ „
„ *Copelandii*		14	„ „
„ *Eastwoodiae*		14	„ „
„ *pisocarpa*		14	„ „
„ *Pringlei*		14	„ „
Group Rosa nutkana PRESL.			
Rosa manca		42	„ „

ROSACEAE (continued)	n	2n	
Wild roses of Western U.S.A. (continued)			
Group Rosa nutkana PRESL. (continued)			
Rosa melina		42	ERLANSSON, 1930.
„ *muriculata*		42	„ „
„ *nutkana*		42	„ „
„ *Spaldingii*		42	„ „
Group Rosa californica			
Rosa Aldersonii		28	„ „
„ *brachycarpa*		28	„ „
„ *Breweri*		28	„ „
„ *californica*		28	„ „
(?)„ *corymbiflora*		28	„ „
„ *Dudleyi*		28	„ „
„ *Greenei*		28	„ „
„ *Johnstonii*		28	„ „
„ *myriantha*		28	„ „
„ *rotundata*		28	„ „
„ *Santa-Crucis*		28	„ „
(?)„ *spithamea* (dwarf)		28	„ „
Prunus amygdalus STOKES	8		DARLINGTON, 1930*a*.
„ *avium*	8		LAWRENCE, 1930.
„ *avium* LINN. var. Bigarreau Kentish	8		DARLINGTON, 1930*a*.
„ *avium* LINN. var. Bigarreau Noir de Schmidt	8		„ „
„ *avium* LINN. var. Governor Wood	8		„ „
„ *avium nana*	24		„ „
„ *cerasifera* EHRH. var. Red Myrobalan	8		„ „
„ *cerasus*	16		LAWRENCE, 1930.
„ *domestica*	24		„ „
„ *domestica* LINN.	24		DARLINGTON, 1930*a*.
„ *domestica* var. Cambridge Gage [1]	$8+3_4+2_3+2_1$		„ „
„ *domestica* var. Coe's Violet [1]	$18+3_3+3_1$		„ „
„ *domestica* var. Comte d'Althan [1]	$24, 23+2_1$		„ „

[1] This is either a hybrid between *P. domestica* LINN. and *P. insititia* LINN. or a variety of either.

	n	2n	
ROSACEAE (continued)			
Prunus (continued)			
Prunus domestica var. Old Greengage	$20+8_1$		DARLINGTON, 1930*a*.
„ *domestica* (Washington seedling)	24, $21+2_3$, $22+4_1$		„ „
„ *Fenzliana*		16	„ „
„ *insititia* LINN.	24		„ „
„ *lannesiana amabilis*	8		„ „
„ *persica* STOKES var. Chinese Flat Peach	8		„ „
„ *persica* STOKES var. Darwin	8		„ „
„ *persica* STOKES var. Earliest of All	8		„ „
„ *persica* STOKES (an ornamental form, Kew)	8		„ „
„ *spinosa* LINN. (wild seedling, Merton)	$14+1_4$		„ „
„ *spinosus*	16		LAWRENCE, 1930.
„ *triflora* var. SHIRO	8		DARLINGTON, 1930*a*.
„ *domestica* × *P. Amygdalus* var. Jefferson × *P. cerasifera* var. Red Myrobalan	16, $6+5_4$, $13+1_3+3_1$, $15+2_1$		„ „
„ *persica* (variety) × *P. Amygdalus* (variety of Bitter Almond)	8		„ „
„ *triflora* var. SHIRO × *P. cerasifera* var. *Pissardii*	8		„ „
„ *triflora* (Japanese Plum) × *P. persica* var. Sea Eagle	8		„ „
LEGUMINOSAE			
Acacia arabica WILLD.		± 52 and ± 104	GHIMPU, 1930.
„ *cyanophylla* LINDL.		26	„ „
„ *dealbata* LINK.		26	„ „
„ *decurrens* WILLD.		26	„ „
„ *eburnea* WILLD.		± 52 and ± 104	„ „

	n	2n	
LEGUMINOSAE (continued)			
Acacia (continued)			
Acacia Farnesiana WILLD. . .	26	± 52 and ± 104	GHIMPU, 1930.
„ *horrida* WILLD.	26	± 52 and ± 104	„ „
„ *longifolia* WILLD. . . .		26	„ „
„ *podalyriaefolia* A. CUNN.		26	„ „
„ *saligna* WENDL. . . .		26	„ „
„ *scorpioides* A. CHEV. var. *adstringens* (SCHUN. et THONN.) A. CHEV. .		52, 104 and 208	„ „
„ *scorpioides* A. CHEV. var. *nilotica* BENTH. .		± 52 and ± 104	„ „
„ *scorpioides* A. CHEV. var. *pubescens* BENTH.		± 52 and ± 104	„ „
Mimosa pudica L.	24		KAWAKAMI, 1930.
Cassia didymbotrya	14		SETHI, 1930.
„ *Leschenaltiana* D.C. . .	24		KAWAKAMI, 1930.
„ *mimosoides* L. 1. . . .	8		„ „
„ *mimosoides* L. 2. . . .	16		„ „
„ *sophera* L.	12		„ „
Sophora angustifolium SIEB. et ZUCC.	9		„ „
Crotalaria alata HAM.	8		„ „
„ *avegyroides* H. B. K.	8		„ „
„ *retusa* L.	8	16	„ „
„ *usaramoensis* BACK.	8		„ „
„ *valetonil*	8		„ „
Lupinus angustifolius L. . . .	24		„ „
„ *luteus* L.	24		„ „
Cytisus scoparius LINK. . . .	24		„ „
TRIGONELLA [1])			
Section E u t r i g o n e l l a			
Subsection C a p i t a t a e			
Trigonella coerulea (L.) SER. .		16	FRYER, 1930.
Subsection G l a d i a t a e			
Trigonella foenum graecum L. .		16	„ „
Section P o c o c k i a			
Subsection S a m a r o i d e a e			
Trigonella cretica L. DESR. . .		probably 16	„ „

[1]) Classification into sections is according to TAUBERT (1891).

LEGUMINOSAE (continued)	n	2n	
Medicago apiculata WILLD. . .		16	GHIMPU, 1930.
„ *arborea* LINN. . . .		32	„ „
„ *ciliaris* KROCK. . .		16	„ „
„ *denticulata* WILLD. .		16	„ „
„ *disciformis* D.C. . .		16	„ „
„ *Echinus* D.C. . . .		16	„ „
„ *falcata* LINN. . . .		32	„ „
„ *Gerardi* WALDST. et KIT.		16	„ „
„ *Helix* WILLD. . . .		16	„ „
„ *laciniata* MILL. . . .		16	„ „
„ *lappacea* DESR. . .		16	„ „
„ *littoralis* RHODE . .		16	„ „
„ *lupulina* LINN. . . .		16	„ „
„ *maculata* WILLD. . .		16	„ „
„ *marina* LINN. . . .		16	„ „
„ *minima* LINN. . . .		16	„ „
„ *Murex* WILLD. . . .		16	„ „
„ *nigra* KROCK. . . .		16	„ „
„ *oliviformis* GUSS. . .		16	„ „
„ *orbicularis* ALL. . .		16	„ „
„ *pentacycla* D.C. . .		16	„ „
„ *rigidula* D.C. . . .		16	„ „
„ *sativa* L.	16		KAWAKAMI, 1930.
„ *sativa* L. [1])	16	32	REEVES, 1930.
„ *sativa* LINN. (sensu lato)		32	GHIMPU, 1930.
„ *sativa* LINN. var. *de Poitou*		32	„ „
„ *sativa* LINN. var. *Géante*		32	„ „
„ *scutellata* MILL. . .		32	„ „
„ *sphaerocarpa* BERTOL.		16	„ „
„ *Tenoreana* SER. . .		16	„ „
„ *tribuloides* DESR. . .		16	„ „
„ *truncatula* GAERTN. .		16	„ „
„ *tuberculata* WILLD. .		16	„ „
„ *turbinata* WILLD. . .		16	„ „
MEDICAGO [2])			
Section L u p u l a r i a			
Medicago lupulina L.	8	16	FRYER, 1930.

[1]) The common and variegated varieties were examined cytologically but no consistent differences were found.

[2]) Classification into sections is according to TAUBERT (1891).

LEGUMINOSAE (continued)	n	2n	
Medicago (continued)			
Section Falcago			
Medicago falcata L.			
strains I, II		32	FRYER, 1930.
strain III		16 [1]	„ „
„ *media* PERS. („GRIMM")		32	„ „
„ *media* [2]		35	„ „
„ *platycarpa* (L.) TRAUTV.		16	„ „
„ *ruthenica* TRAUTV.		16	„ „
„ *sativa* L.		32	„ „
Section Spirocarpos			
Subsection Orbiculares			
Medicago carstiensis WULF		16	„ „
„ *orbicularis* ALL.		16	„ „
„ *soleiralii* DUBY		16	„ „
Subsection Intertextae			
Medicago ciliaris L. (ALL.)		16	„ „
„ *echinus* D.C.		16	„ „
„ *intertexta* MILL		16	„ „
Subsection Scutellatae			
Medicago rugosa DESR.		32	„ „
„ *scutellata* L. WILLD.		32	„ „
Subsection Rotatae			
Medicago rotata BOISS.		16	„ „
Subsection Pachyspirae			
Medicago littoralis RHODE		16	„ „
„ *murex* (L.) ALL.		16	„ „
„ *muricata* (L.) ALL.		16	„ „
„ *obscura* RETZ.		16, 17 or 18	„ „
„ *rigidula* (L.) DESR.		14	„ „
„ *tuberculata aculeata*		16	„ „
Subsection Euspirocarpae			
Medicago arabica (L.) ALL.		16	„ „
„ *hispida confinis* KOCH (BURNAT)		14	„ „
„ *hispida denticulata* WILLD. URBAN		14	„ „
„ *hispida nigra* WILLD. BURNAT		14	„ „
„ *hispida terebellum* WILLD. URBAN		14	„ „

[1]) One tetraploid cell with 32 chromosomes was found.

[2]) Though this one plant was *Media* — like it was thought to be a hybrid by its irregular meiosis.

LEGUMINOSAE (continued)	n	2n	
Medicago (continued)			
Subsection Leptospirae			
Medicago coronata DESR. . . .		16	FRYER, 1930.
„ *laciniata* MILL. . . .		16	„ „
MELILOTUS [1])			
Section Campyloritis			
Melilotus sulcatus DESF. . . .		16	„ „
Section Plagiorytis			
Melilotus officinalis (L.) MEDIKUS		16	„ „
Section Coelorytis			
Melilotus alba MEDIKUS . . .		16	„ „
„ *indica* ALL.	8	16	„ „
Trifolium hybridum L.	8		KAWAKAMI, 1930.
„ *pratense* L.	7		„ „
„ *repens* L.	16		„ „
Lotus corniculatus L. var. *japonicus* REGEL	6		„ „
Tribe Galegeae BRONN [2])			
II. Subtribe Psoraleinae TAUB.			
Psoralea bituminosa L.		20	TSCHECHOW, 1930.
	10	20	KREUTER, 1930.
„ *glandulosa* L.		20	„ „
„ *macrostachya* . – . .		20	„ „
„ *palaestina* L.		20	„ „
Amorpha Californica Nutt. . .	10		„ „
„ *fruticosa* L.		40	TSCHECHOW, 1930.
	ca. 20 [3])		KREUTER, 1930.
„ *fruticosa* var. *glabra* .	ca. 20 [3])		„ „
„ *microphylla* PURSH. .	10		„ „
I. Subtribe Indigoferinae TAUB.			
Indigofera decora LINDL. . . .		48	TSCHECHOW, 1930.
„ *Gerardiana* WALL. .	24		KREUTER, 1930.
„ *Kirilowi* MAXIM. .	8		KAWAKAMI, 1930.
„ *pseudo-tinktoria* MATSUM.	8		„ „
„ *saffruticosa* MILL. .	16		„ „

[1]) Classification into sections is according to TAUBERT (1891).

[2]) Classification is according to ASCHERSON & GRAEBNER, supplemented by Monograph by BUNGE (1869 & 1874) on *Astragalus* and *Oxytropsis*.

[3]) Because the chromosomes were „clumped" on the heterotypic division stages it was difficult to determine the haploid number exactly.

	n	2n	
LEGUMINOSAE (continued)			
Tribe Galegeae Bronn (continued)			
III. Subtribe Tephroseinae Taub.			
Galega officinalis L.		16	Tschechow, 1930.
	8		Kreuter, 1930.
„ *orientalis* Lam. . . .	(probably) 8		„ „
Millettia japonica A. Gray . .	8		Kawakami, 1930.
Tephrosia Hookeriana Wet. A.	16		„ „
Wistaria brachybotrys Sieb. et Zucc.	8		„ „
„ *floribunda* D.C. . . .	8		„ „
„ *multijuga* van Houtte (*W. chinensis* var. *multijuga* Hook.) .		48	Tschechow, 1930.
IV. Subtribe Robiniinae Taub.			
Robinia hispida	30 [1] / 2	30	Kreuter, 1930.
„ *pseudacacia* L.. . . .		22	Tschechow, 1930.
	(probably) 10		Kreuter, 1930.
Sesbania aculeata Pers. . . .	16		Kawakami, 1930.
Carmichaelia australis R. Br. .	15		Kreuter, 1930.
V. Subtribe Coluteinae Taub.			
Colutea arborescens L.		16	Tschechow, 1930.
„ *halepica* Lam.	8		Kreuter, 1930.
„ *media* Willd. (*C. arborescens* L. × *C. orientalis* Lam.) . . .	8		„ „
„ *orientalis* Lam.	8		„ „
VI. Subtribe Astragalinae Taub.			
Caragana arborescens Lam. . .		16	Tschechow, 1930; Kreuter, 1930.
„ *frutescens* D.C. . . .		32	Tschechow, 1930.
Genus Astragalus Tourn.			
Subgenus Trimeniaeus Bunge			
Astragalus baeticus L.	8		Kreuter, 1930.
„ *edulis* Dur.	ca. 14		„ „
„ *hamosus* L.	24 [2]		„ „
		48	Tschechow, 1930.
„ *sesameus* L.	8		Kreuter, 1930.
		16	Tschechow, 1930.

[1]) Reduction division was irregular showing 10 large and 20 smaller chromosomes.
[2]) Several pairs of chromosomes showed a tendency to become associated in the metaphase plate so that only 22 chromosomes were sometimes counted.

LEGUMINOSAE (continued)	n	2n	
Tribe Galegeae Bronn (continued)			
VI. Subtribe Astragalinae Taub. (Continued)			
Genus Astragalus Tourn. (continued)			
Subgenus Phaca Bunge			
Astragalus altaicus Bunge . .		16	Tschechow, 1930.
„ *exscapus* B. *Transsilvanicus* A. & G. = *A. Transsilvanicus* Barth. . . .		16	„ „
„ *galegiformis* L. . .	8		Kreuter, 1930.
„ *membranaceus* Fisch.		16	Tschechow, 1930.
„ *Sieversianus* Pall..		16	„ „
Subgenus Hypoglottis Bunge			
Astragalus hypoglottis L. . . .		16	„ „
Subgenus Tragacantha Bunge			
Astragalus Echinus D.C. . . .		64	„ „
Subgenus Cercidothrix Bunge			
Astragalus candidissimus Led.		16	„ „
„ *falcatus* Lam. . . .	8		Kreuter, 1930.
„ *massiliensis* Lam. .		16	„ „
„ *monspessulanus* L. .	8		„ „
Subgenus Calycophysa			
Astragalus alopecurioides L.. .	8		Kreuter, 1930.
„ *vulpinus* Willd. .	8		„ „
Subgenus?			
Astragalus sinicus L.	8		Kawakami, 1930.
Biserrula Pelecinus L.	8		Kreuter, 1930.
Calophaca wolgarica Fisch. . .	8		„ „
Genus Oxytropis D.C.			
Subgenus Euoxytropis Boiss.			
Section Ortholoma Bunge			
Oxytropis vaginata Fisch. . .		16	Tschechow, 1930.
Section Diphragma Bunge			
Oxytropis Halleri Bunge . . .		16	„ „
„ *uralensis* Pall.. . .		16	„ „
Genus Glycyrrhiza L.			
Glycyrrhiza aspera Pall. . . .		16	„ „
„ *echinata* L.	8		Kreuter, 1930.
„ *uralensis* Fisch. .		16	Tschechow, 1930.
Ornithopus sativus Brot. . . .	8	16	Kawakami, 1930.
Onobrychis viciaefolia Scop. . .	11		Corti, 1930*a*.
Aeschinomene indica L. . . .	20		Kawakami, 1930.
Arachis hypogaea L.	20	40	„ „

LEGUMINOSAE (continued)	n	2n	
Arachis (continued)			
Arachis hipogaea var. *microcarpa* A. CHEV.		±40	GHIMPU, 1930.
„ *prostrata* BENTH. var. *Rasteiro*		±40	„ „
Desmodium perpesium D.C.	11		KAWAKAMI, 1930.
Lespedeza bicolor TURCZ.	9		„ „
„ *cyrtobotrya* MIQ.	9		„ „
„ *homoloba* NAKAI	9		„ „
„ *Sieboldi* MIQ.	9		„ „
„ *Sieboldi* var. *albiflora* SCHNEID.	9		„ „
Vicia amphicarpa L.	5	10	SVESHNIKOVA, 1930.
„ *angustifolia brachisomica* SV.		12	„ „
„ *angustifolia dolichosomica* SV.	6	12	„ „
„ *faba* L.	6	12	KAWAKAMI, 1930.
„ *faba* L. var. *megalosperma*	6 [1]	12 [1]	MAEDA, 1930*b*.
„ *hirsuta* KOCH.	7		KAWAKAMI, 1930.
„ *sativa* L.	6	12	SVESHNIKOVA, 1930.
	7		KAWAKAMI, 1930.
„ *sativa* L. var. *normalis* MAKINO	7		„ „
„ *tetrasperma* MOENCH.	7		„ „
„ *unijuga* AL.BR.	18		„ „
„ *amphicarpa* L. × *Vicia sativa* L.	6		SVESHNIKOVA, 1930.
„ *sativa* L. × *Vicia amphicarpa* L.	6 or $12\frac{1}{2}$		„ „
„ *sativa* L. × *Vicia angustifolia dolichosomica* SV.	$4+4\frac{1}{2}$		„ „
Lathyrus aphaca	7		CORTI, 1930*a*.
„ *maritimus* BIGEL.	7		KAWAKAMI, 1930.
„ *odoratus*	7		„ „
„ *odoratus* L.	7	14	MAEDA, 1930*a*.
Pisum arvense L.	7	14	LUTKOV, 1930.
„ *elatius* BIEB.	7	14	„ „

[1]) One pair of chromosomes in the root-tips and also in the heterotypic division of the pollen mother-cells is longer than the other 5 pairs.

	n	2n	
LEGUMINOSAE (continued)			
Pisum (continued)			
Pisum fulvum SIBTH.	7	14	LUTKOV, 1930.
„ *humile* BOISS.	7	14	„ „
„ *Jomardi* SCHRANK.	7	14	„ „
„ *sativum*	7 [1]		HAMMARLUND & HÅKANSSON, 1930.
		14	LEVITSKY, 1930.
	7	14	KAWAKAMI, 1930.
„ *sativum* L.	7	14	LUTKOV, 1930.
„ *sativum* L. (Gradus type and rogue)		14	BUNTEN, 1930.
„ *humile* BOISS. × *Pisum sativum* L. F_1, F_2, F_3	7	14	LUTKOV, 1930.
Glycine Soja BENTH. [2]	20	40	KAWAKAMI, 1930.
Canavalia ensiformis D.C.	11		„ „
Phaseolus lunatus L. [3]	11	22	„ „
„ *radiatus* L. var. *aurea* PRAIN	11	22	„ „
„ *radiatus* L. var. *typicus* PRAIN [4]	11	22	„ „
„ *vulgaris* L. [5]	11	22	„ „
Vigna sinensis ENDL.	12		„ „
„ *sinensis* var. *Catiang* NAKAI	12		„ „
„ *sesuquipedalis* A. I. PIERTERS	12		„ „
„ *sesuquipedalis* A. I. PIERTERS var. *melanophthalmus* NAKAI	12		„ „
„ *sesuquipedalis* A. I. PIERTERS var. *purpurascens* NAKAI	12		„ „
Dolichos Lablab L.	11		„ „
GERANIALES			
RUTACEAE			
Ruta patavina L.	9	18	CAPPELLETTI, 1930.

[1]) Of 45 plants (cross progeny of F_2 plants used by HÅKANSSON, 1929*a* (GAISER 1930*b*) with a double recessive) 19 had 7 free gemini and 26 had 5 gemini and a ring or chain of 4 chromosomes.

[2]) For 35 varieties examined the haploid number was found to be 20. Two varieties were examined somatically.

[3]) For 5 varieties examined the haploid number was found to be 11. Two varieties were examined somatically.

[4]) For 5 horticultural varieties examined the haploid number was found to be 11. One variety was examined somatically.

[5]) 4 horticultural varieties were examined.

	n	2n	
EUPHORBIACEAE			
Daphniphyllum macropodum MIQ.	16		VENTURA, 1930.
EUPHORBIA [1])			
Subgenus Tithymalus			
Section Esulae			
Euphorbia corollata		18	HARRISON, H. H., 1930.
„ *helioscopia*		18	„ „ „ „
„ *platyphyllos*		18	„ „ „ „
„ *terracina*		18 and 36 [2])	„ „ „ „
„ *verrucosa*		18	„ „ „ „
„ *welwitschii*		18 and 36 [3])	„ „ „ „
RHAMNALES			
RHAMNACEAE			
Zizyphus sativa GAERTN. var. *inermis*	13	26	CHIARUGI, 1930*b*.
VITACEAE			
Vitis labrusca		38	GHIMPU, 1930.
„ *quadrangularis* WALL. (*Cissus quadrangularis* LINNE.)		44—53	„ „
„ *riparia*		38	„ „
„ *riparia* var. *Gloir de Montpellier*	19		NEGRUL, 1930.
„ *riparia* var. *Grand Glabr.* .	19		„ „
„ *riparia* var. *Scuppernong*	19		„ „
„ *rupestris* var. *du Lot* . .	19	38	„ „
„ *vinifera*		38	GHIMPU, 1930.
Vitis vinifera			
French varieties:			
Chasselas rose	19	38	NEGRUL, 1930.
Grand Noir d. C.		38	„ „
Malaga bleu	19		„ „
English variety:			
var. *Muscat d'Hamburg* . .	19		„ „
Caucasian varieties:			
var. *Otzhanure Sapere* . . .	19		„ „
„ *Rka tzitel* (Kahetia) . .	19		„ „
„ *Rka tzitel* (Kutais). . .	19		„ „
Bessarabian varieties:			
var. *Alemtchak*	19		„ „

[1]) Classification is according to ENGLER & PRANTL.

[2]) Some tetraploid cells were found scattered singly amongst diploid cells of both periblem and plerome.

[3]) The tetraploid cells were found in rows of 10 or 12 in the outermost layers of the periblem.

	n	2n	
VITACEAE (continued)			
Bessarabian varieties (continued)			
var. *Plavai*	19	38	NEGRUL, 1930.
„ *Serectia*	19		„ „
Hybrids of American Species:			
Vitis Berlandieri × *V. Riparia* 161—46	19		„ „
„ *Riparia* × *V. Rupestris* 3309	19	38	„ „
„ *Riparia* × *V. Rupestris* COUD. 3310	19		„ „
European-American hybrids:			
Vitis vinifera Chasselas × *Berlandieri* 41-B		38	„ „
Vitis vinifera Chasselas Rose × *V. rupestris* (4401 COUDERC)	19		„ „
Vitis riparia × *Gamay* (*V. vinifera*) *Oberlin* 595		38	„ „
Complex hybrids:			
Couderc 12	19		„ „
„ 7120 (*Lincecumii* × *rupestris* × *vinifera*)		38	„ „
Seibel I	19		„ „
Seibel 128 (*rupestris* × *Lincecumii* × *vinifera*)	19		„ „
Vitus sp.	19, 38		LAWRENCE, 1930.
MALVALES			
TILIACEAE			
Tilia argentea	ca. 40		WALLISCH, 1930.
„ *cordata*	ca. 36		„ „
„ *platyphyllos*	ca. 40		„ „
PARIETALES			
OCHNACEAE			
Ochna serrulata WALP.		35	CHIARUGI, 1930*c*; CHIARUGI & FRANCINI, 1930.
CISTACEAE			
Cistus sp.	8		LAWRENCE, 1930.
VIOLACEAE			
VIOLA			
Viola Riviniana REICHB. [1]	20		WEST, 1930.
Section Nominium			
Viola cucullata AIT.	27	54	BAMFORD & GERSHOY, 1930.

[1]) Two patches of wild plants were investigated, one being a patch of *Viola Riviniana* var. *nemorosa* (N. W. and H.).

VIOLACEAE (continued)	n	2n	
VIOLA (continued)			
Section Nominium (continued)			
Viola elatior FRIES.	20	40	BAMFORD & GERSHOY, 1930.
„ *incognita* BRAINERD . .	22	44	„ „ „ „
„ *lanceolata* L.	12	24	„ „ „ „
„ *pallens* (BANKS) BRAINERD	12	24	„ „ „ „
„ *silvatica* FRIES. (= *sylvestris*)	20	40	„ „ „ „
„ *striata* AIT.	10	20	„ „ „ „
Subgroup Curvo-peduncu-latae			
Viola collina BESSER.		20	MIYAJI, 1930*a*.
„ *grypoceras* A. GRAY var. *exilis* NAKAI		20	„ „
„ *grypoceras* A. GRAY var. *purpurello-calcarata* MAKINO		20	„ „
„ *Hideoi* NAKAI		20	„ „
„ *odorata* L.	10	20	„ „
Subgroup Plagiostigma			
Viola mandshurica W. BCKR. var. *plena*		48	„ „
„ *Savatieri* MAKINO . . .		36	„ „
„ *soeulensis* NAKAI . . .		48	„ „
„ *eizanensis* × *V. mandshurica*		36	„ „
„ *mandshurica* × *V. chaerophylloides*		36	„ „
Subgroup Stolonosae			
Viola repens TURCZ.		24	„ „
Section Melanium			
Viola orphanidis BOISS. (from Lausanne)	10	20	CLAUSEN, J., 1930.
„ *orphanidis* (from Edinburgh Bot. Gard.) . .	$10+1_1$	21	„ „ „
„ *orphanidis* (2n = 21) offspring		20, 21, 22	„ „ „
„ *Wittrockiana* GAMS. (= Pensée) [1]		24 [2]	MIYAJI, 1930*a*.

[1]) Seven varieties were studied: *Himmelskönigin, Kaiser Wilhelm, Prinz Heinrich, Märzzauber, Goldelse, Nordpol, Eiskönig.*

[2]) In the pollen mother cells of *Märzzauber* 25 was once found as the haploid number.

	n	2n	
VIOLACEAE (continued)			
Viola hybrids:			
Viola elatior FRIES. × *V. striata* AIT.		30	BAMFORD & GERSHOY, 1930.
„ *incognita* BRAIN. × *V. lanceolata* L.		34	„ „ „ „
„ *pallens* (BANKS) BRAIN. × *V. cucullata* AIT.		39	„ „ „ „
„ *silvatica* FRIES. × *V. striata* AIT.		30	„ „ „ „
CARICACEAE			
Carica papaya	9		LINDSAY, 1930.
MYRTIFLORAE			
MYRTACEAE			
Myrtus communis L.	11 [1]		GRECO, 1930.
OENOTHERACEAE			
Oenothera biennis München, *albicans. rubens*	$\frac{14}{2}$ [2]		CLELAND & OEHLKERS, 1930.
„ *biennis sulfurea* Hannover	$\frac{14}{2}$ [3]		„ „ „ „
„ *cana* DE VRIES (secondary form)	$\frac{14+1}{2}$ small one [3]	$14+{}^1/_2$	HÅKANSSON, 1930*c*.
„ *cana* DE VRIES (secondary form) one plant	$\frac{14}{2}$ [4]		HÅKANSSON, 1930*c*.
„ *Cockerelli, curtans. elongans*	$\frac{14}{2}$ [5]		CLELAND & OEHLKERS, 1930.
„ *compressa*		28	A. HEYN (given by DE VRIES), 1930.
„ *curta* HERIBERT NILSSON	$\frac{15}{2}$ [6]		HÅKANSSON, 1930*c*.

[1]) In the endosperm the triploid number 33 was found.
[2]) Arranged as a ring of 6 + a ring of 8.
[3]) Arranged as an open chain of 11 with the small chromosome (a half) at one end of it + 2 pairs of chromosomes.
[4]) Arranged as a chain of 10 + 2 pairs of chromosomes.
[5]) Arranged as a ring of 14.
[6]) Arranged as an open chain of 11 + 2 pairs of chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera (continued)			
Oenothera dependens DE VRIES.	15 [1] / 2		HÅKANSSON, 1930*c*.
„ *descrens*	7 [2]		„ 1930*b*.
„ *distans*	14 [3] / 2	14	„ „
„ *eriensis*		14	GATES & GOODWIN, 1930.
„ *franciscana* BARTLETT (pointed tips) . . .	7 / 2		DAVIS & KULKARNI, 1930.
„ *grandiflora* (DE VRIES) *acuens. truncans*	14 [4] / 2		CLELAND & OEHLKERS, 1930.
„ *Hookeri*	7		WEIER, 1930.
„ *Hookeri*, h*Hookeri*. h*Hookeri*	7 [5]		CLELAND & OEHLKERS, 1930.
„ *Lamarckiana* . . .		14	LEVITSKY, 1930.
	14 [6] / 2		CAPINPIN, 1930*b*, WEIER, 1930.
„ *Lamarckiana* (DE VRIES) *velans. gaudens*	14 [6] / 2		CLELAND & OEHLKERS, 1930.
„ *Lamarckiana cruciata* (OEHLKERS) *velans. gaudens*	14 [7] / 2		„ „ „ „
„ *Lamarckiana* mut. *cucumis*		15	DE VRIES, 1930.
„ *Lamarckiana* mut. *latifrons*	7		EMERSON, 1930.
„ *Lamarckiana* mut. *nidiformis*	14 [7] / 2		HÅKANSSON, 1930*b*.

[1]) Arranged as a chain of 13 + 1 pair of chromosomes.

[2]) Generally arranged as 7 pairs. Often members of a pair were open and even separated as univalents.

[3]) Arranged as a ring of 8 + 3 pairs of chromosomes.

[4]) Arranged as a ring of 14.

[5]) Arranged as 7 pairs of chromosomes.

[6]) WEIER (1930), CLELAND & OEHLKERS (1930) found the chromosomes arranged as a chain of 12 plus one pair. CAPINPIN (1930*a*, *b*) found the chromosomes in two or more circles, never in a single one.

[7]) Arranged as a chain of 12 plus 1 pair of chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera (continued)			
Oenothera Lamarckiana mut.			
rubrisepala α. . .	$\frac{14}{2}$ [1]		HÅKANSSON, 1930*b*.
„ *lata* DE VRIES (from *flavescens*)	$\frac{15}{2}$ [2]		„ 1930*c*.
„ *lata* HERIBERT NILSSON (from *liquida* and from *lata* × *Lamarckiana*	$\frac{15}{2}$ [2]		„ „
„ *liquida* DE VRIES . .	$\frac{15}{2}$ [2]		„ „
„ *longipetiolata* HERIBERT NILSSON . .	$\frac{15}{2}$ [2]		„ „
„ *nitens* DE VRIES . .	$\frac{15}{2}$ [3]		„ „
„ *nutans* ATK. & BARTL.	$\frac{14}{2}$ [4]		CATCHESIDE, 1930*a*.
„ *pachycarpa*	$\frac{14}{2}$ [4]		RUDLOFF, 1930*b*.
„ *pulla* DE VRIES (secondary form). . .	$\frac{15}{2}$ [5]		HÅKANSSON, 1930*c*.
„ *pycnocarpa* ATK. & BARTL.	$\frac{14}{2}$ [4]		CATCHESIDE, 1930*a*.
	$\frac{21}{2}$ [6]		„ 1930*a*, *b*.
„ *rubricalyx*	$\frac{14}{2}$ [7]		EMERSON, 1930.
		14	GATES & GOODWIN, 1930.
„ *simplex elongata* . .	$\frac{14}{2}$ [7]		HÅKANSSON, 1930*b*.

[1]) Generally arranged as a ring of 4 plus 5 free pairs of chromosomes but many variations of arrangement of the 5 pairs occurred.

[2]) Arranged as a chain of 13 plus 1 pair of chromosomes.

[3]) Arranged as an open chain of 11 plus 2 pairs of chromosomes.

[4]) Arranged as a ring of 14.

[5]) Arranged as a ring of 6, 1 trivalent plus 3 pairs of chromosomes.

[6]) CATCHESIDE (1930*a*) found one plant to be triploid with a ring of 21 chromosomes. Usually 10 and 11 chromosomes passed to either pole but occasionally non-disjunction resulted in a 9—12 division. CATCHESIDE (1930*b*) having reinvestigated found various combinations of univalents; ring-and-rod pairs; chain, Y-shaped, and ring-and-rod trivalents; various quadrivalents and quinquivalents.

[7]) Arranged as a ring of 8 plus 3 pairs of chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera (continued)			
Oenothera stricta HERIBERT NILSSON (= *O. pulla* DE VRIES) . . .	$\frac{15}{2}$ [1]		HÅKANSSON, 1930*c*.
„ *strigosa, deprimens. stringens*	$\frac{14}{2}$ [2]		CLELAND & OEHLKERS, 1930.
„ *suaveolens, albicans. flavens*	$\frac{14}{2}$ [3]		„ „ „ „
„ *suaveolens sulfurea albicans, flavens* . .	$\frac{14}{2}$ [3]		„ „ „ „
„ mutant *quadrata* (from *O. Lamarckiana ingeminans* . .		21	DE VRIES, 1930.
„ mutant *quadrata* × *O. (biennis* × *Lamarckiana) laeta* = *O. Lamarckiana ingeminans*		14, 28 [4]	„ „
Primary mutants:			
cana		15	„ „
lata		15	„ „
liquida		15	„ „
pallescens		15, 17	„ „
pulla		15, 16, 19	„ „
scintillans		15	„ „
spathulata		15, 16, 17	„ „
Secondary mutants:			
acuminata		19	„ „
hamata.		16	„ „
lata minor		15, 16, 17	„ „
latifolia		16	„ „
lingua		15	„ „
militaris		16, 17	„ „
planifolia		15	„ „
rotunda		16	„ „
synedra		17	„ „

[1]) Generally arranged as a chain of 13 plus 1 pair of chromosomes. Frequently variations in arrangement were observed due to the breaking of the chain into shorter lengths of 9, 7, 5, 4, and 3 chromosomes.

[2]) Arranged as a ring of 14.

[3]) Arranged as a chain of 12 plus 1 pair of chromosomes.

[4]) One plant had 28 chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera hybrids:			
Oenothera ammophila × (*O. biennis* × *O. rubricalyx*) . .	$\frac{14}{2}$ [1]		GATES & SHEFFIELD, 1930.
(*Oenothera biennis* × *O. rubricalyx*) × *O. ammophila* . .	7 [2]		" " " "
(*Oenothera biennis* × *O. Lamarckiana*) F_1 *laeta* × (*O. biennis* × *O. Lamarckiana*) F_1 *velutina* =			
O. ambigua	$\frac{14}{2}$ [3]		HÅKANSSON, 1930*b*.
O. laeta	$\frac{14}{2}$ [4]		" "
O. velutina	$\frac{14}{2}$ [5]		" "
Oenothera rubricalyx × *O. eriensis* F_1		7	GATES & GOODWIN, 1930.
Oenothera grandiflora × *O. Hookeri*			
acuens. [h]*Hookeri*	$\frac{14}{2}$ [6]		CLELAND & OEHLKERS, 1930.
truncans. [h]*Hookeri*	$\frac{14}{2}$ [7]		" " " "
Oenothera Hookeri × *O. grandiflora*			
[h]*Hookeri. acuens*	$\frac{14}{2}$ [6]		" " " "
Oenothera grandiflora × *O. Lamarckiana*			
acuens. gaudens	$\frac{14}{2}$ [7]		" " " "
truncans. gaudens	$\frac{14}{2}$ [8]		" " " "
acuens. velans	$\frac{14}{2}$ [9]		" " " "

[1]) Arranged as a ring of 8 plus 3 pairs of chromosomes. Ten plants belonging to F_2 and F_5 families showed identical conditions.

[2]) The 7-ring pairs were frequently interlocked and irregularities in division were frequent.

[3]) Arranged as a chain of 12 plus 1 pair of chromosomes.

[4]) Arranged as a ring of 6 plus a ring of 8.

[5]) All of the 14 chromosomes were joined but sometimes the chain was open or even broken into shorter pieces.

[6]) Arranged as 2 rings of 4 plus 3 pairs of chromosomes.

[7]) Arranged as a ring of 14.

[8]) Arranged as a ring of 10 and a ring of 4.

[9]) Arranged as a ring of 6 and a ring of 4 plus 2 pairs of chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera hybrids (continued)			
truncans. velans	$\frac{14}{2}$ [1]		CLELAND & OEHLKERS, 1930.
Oenothera Lamarckiana × *O. grandiflora*			
gaudens. acuens	$\frac{14}{2}$ [2]		" " " "
gaudens. truncans	$\frac{15}{2}$ [3]		" " " "
velans. acuens	$\frac{14}{2}$ [4]		" " " "
velans. truncans	$\frac{14}{2}$ [1]		" " " "
Oenothera Lamarckiana cruciata × *O. strigosa*			
gaudens. stringens	$\frac{14}{2}$ [2]		" " " "
velans. stringens	$\frac{14}{2}$ [4]		" " " "
Oenothera grandiflora × *O. strigosa*			
acuens. stringens.	$\frac{14}{2}$ [5]		" " " "
truncans. stringens	$\frac{14}{2}$ [1]		" " " "
Oenothera strigosa × *O. Lamarckiana cruciata*			
deprimens. gaudens	$\frac{14}{2}$ [6]		" " " "
deprimens. velans	$\frac{14}{2}$ [6]		" " " "
Oenothera suaveolens sulfurea × *O. Lamarckiana*			
flavens. gaudens	$\frac{14}{2}$ [7]		" " " "
flavens. velans	$\frac{14}{2}$ [5]		" " " "

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[1]) Arranged as a ring of 10 and a ring of 4.
[2]) Arranged as a ring of 14.
[3]) Only one plant resulted from this cross showing 2n = 15, arranged in an open chain of 5 and one of 10.
[4]) Arranged as a ring of 6 and a ring of 4 plus 2 pairs of chromosomes.
[5]) Arranged as 2 rings of 4 plus 3 pairs of chromosomes.
[6]) Arranged as a chain of 10 plus 2 pairs of chromosomes.
[7]) Arranged as a chain of 12 plus 1 pair of chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera hybrids (continued)			
albicans. gaudens	$\frac{14}{2}$ [1]		CLELAND & OEHLKERS, 1930.
albicans. velans	$\frac{14}{2}$ [2]		„ „ „ „
Oenothera Lamarckiana × *O. suaveolens sulfurea*			
gaudens. flavens	$\frac{14}{2}$ [3]		„ „ „ „
velans. flavens	$\frac{14}{2}$ [4]		„ „ „ „
Oenothera suaveolens × *O. Cockerelli*			
flavens. elongans	$\frac{14}{2}$ [5]		„ „ „ „
albicans. elongans	$\frac{14}{2}$ [3]		„ „ „ „
Oenothera Cockerelli × *O. suaveolens*			
curtans. flavens	$\frac{14}{2}$ [3]		„ „ „ „
Oenothera suaveolens sulfurea × *O. strigosa*			
flavens. stringens	$\frac{14}{2}$ [6]		„ „ „ „
albicans. stringens	$\frac{14}{2}$ [3]		„ „ „ „
Oenothera strigosa × *O. suaveolens sulfurea*			
deprimens. flavens	$\frac{14}{2}$ [3]		„ „ „ „
Oenothera (r — *biennis* × *pachycarpa*)			
[b]*albisubcurva*	$\frac{14}{2}$ [7]		RUDLOFF, 1930*b*.
Oenothera (*suaveolens* × *pachycarpa*)			
[s]*albisubcurva*	$\frac{14}{2}$ [7]		„ „

[1]) Arranged as a ring of 6 plus a ring of 8 chromosomes.
[2]) Arranged as a ring of 14.
[3]) Arranged as a chain of 12 plus 1 pair of chromosomes.
[4]) Arranged as 2 rings of 4 plus 3 pairs of chromosomes.
[5]) Arranged as a ring of 8 plus 3 pairs of chromosomes.
[6]) Arranged as a ring of 4 plus 5 pairs of chromosomes.
[7]) Arranged as a ring of 14 chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera hybrids (continued)			
Oenothera (*pachycarpa* × r—*Lamarckiana*) . *auctivelutina*	$\frac{14}{2}$ [1]		RUDLOFF, 1930*b*
Oenothera (r — *muricata* × *pachycarpa*) *rigidisubcurva*	$\frac{14}{2}$ [1]		" "
Oenothera (r — *Lamarckiana* × *pachycarpa*) *subcurvielutina*	$\frac{14}{2}$ [1]		" "
Oenothera [(r — *biennis* × *pachycarpa*) [b]*albisubcurva* × *suaveolens*] *L. albiflava*	$\frac{14}{2}$ [2]		" "
Oenothera (*pachycarpa* × *Hookeri*) *Hookeriaucta*	$\frac{14}{2}$ [3]		" "
Oenothera (*suaveolens* × *pachycarpa*) *flavisubcurva* × *R-biennis* .	$\frac{14}{2}$ [3]		" "
Oenothera (*suaveolens* × *pachycarpa*) *flavisubcurva* × *R-biennis* = MB, mB, Mb, and mb *rubiflava*	$\frac{14}{2}$ [4]		" "
Oenothera (*suaveolens* × *pachycarpa*) MmBb *flavisubcurva* . . .	$\frac{14}{2}$ [5]		" "
Oenothera (*suaveolens* × *pachycarpa*) MmBb *flavisubcurva* (selfpollinated)	$\frac{14}{2}$ [5]		" "
Oenothera (*suaveolens* × *pachycarpa*) MmBb *flavisubcurva* × *pachycarpa*	$\frac{14}{2}$ [5]		" "

[1]) Arranged as a ring of 14 chromosomes.
[2]) Arranged as a chain of 12 plus 1 pair of chromosomes.
[3]) Arranged as a chain of 10 plus 2 pairs of chromosomes.
[4]) Arranged as a ring of 8, a ring of 4 plus 1 pair of chromosomes.
[5]) Arranged as two rings of 4 plus a ring of 6 chromosomes.

OENOTHERACEAE (continued)	n	2n	
Oenothera hybrids (continued)			
MMBb *flavisubcurva* × *pachycarpa* . .	$\frac{14}{2}$ [1]		RUDLOFF, 1930*b*.
mmBb *flavisubcurva* × *pachycarpa* . .	$\frac{14}{2}$ [1]		„ „
bbMm *flavisubcurva* × *pachycarpa* . .	$\frac{14}{2}$ [1]		„ „
BBMm *flavisubcurva* × *pachycarpa* . .	$\frac{14}{2}$ [1]		„ „
BBMm *flavisubcurva* × *pachycarpa* . .	$\frac{14}{2}$ [2]		„ „
„ *Lamarckiana* × *O. rubricalyx* (*velans.* ^{h}*latifrons*) F_1 . . .	$\frac{14}{2}$ [3]		EMERSON, 1930.
„ *Lamarckiana* × *O. rubricalyx* (*velans.* ^{h}*latifrons*) F_2 (2 types)	$\frac{14}{2}$ [3], 7		„ „
„ *Lamarckiana* × *O. rubricalyx* (^{h}*latifrons.* ^{h}*latifrons*) F_2	7		„ „
„ *Lamarckiana* × *O. latifrons* F_2 (*gaudens.* ^{h}*latifrons*) (2 types)	$\frac{14}{2}$ [3], 7		EMERSON, 1930.
„ *rubricalyx* (modified *velans*) × *O. Lamarckiana* F_1 *gaudens*	$\frac{14}{2}$ [4]		„ „
UMBELLIFLORAE			
UMBELLIFERAE			
SCANDICEAE [5]			
(a) *Scandicinae*			
Myrrhis odorata var. *aurea* . .	11		SCHULZ-GAEBEL, 1930.

[1]) Arranged as a ring of 6 and a ring of 4 plus 2 pairs of chromosomes.
[2]) Arranged as a ring of 6 plus 4 pairs of chromosomes.
[3]) Arranged as a ring of 8 plus 3 pairs of chromosomes.
[4]) Arranged as a chain of 12 plus 1 pair of chromosomes.
[5]) Classification is according to DRUDE (1897).

UMBELLIFERAE (continued)	n	2n	
SCANDICEAE (continued)			
(a) *Scandicinae* (continued)			
Chaerophyllum aureum L. . .	11		SCHULZ-GAEBEL, 1930.
„ *bulbosum* L. . .	11		„ „ „
Anthriscus cerefolium HOFFM. .	9		„ „ „
„ *fumarioides*	9		„ „ „
„ *silvestris* (L.) HOFFM.		16	MELDERIS, 1930.
Scandix Pecten Veneris L. . .		16	„ „
	8		SCHULZ-GAEBEL, 1930.
(b) *Caucalinae*			
Torilis anthriscus (L.) GMEL. .	8		MELDERIS, 1930.
„ *heterophylla* GUSS. . . .		16	„ „
SMYRNIEAE			
Conium maculatum L.	8		NORDHEIM, 1930.
AMMINEAE			
(a) *Carinae*			
Bupleurum longifolium L. . .	8		SCHULZ-GAEBEL, 1930.
„ *rotundifolium* L. .	8		„ „ „
	11		MELDERIS, 1930.
Petroselinum sativum HOFFM. .	11		SCHULZ-GAEBEL, 1930.
Cicuta virosa L. var. *univalens* m.		22	MELDERIS, 1930.
„ *virosa* L. var. *bivalens* m.	22		„ „
Ammi majus L.	11		SCHULZ-GAEBEL, 1930.
„ *visnaga* LAM.	11		„ „ „
Carum Bulbocastanum KOCH. .	11		„ „ „
„ *Carvi* L.	11		„ „ „ ; MELDERIS, 1930.
„ *rigidulum* KOCH . . .	11		SCHULZ-GAEBEL, 1930.
Aegopodium Podagraria L. . .	22		MELDERIS, 1930.
Pimpinella anisum L.	9		SCHULZ-GAEBEL, 1930.
„ *magna* L.	9		„ „ „
„ *peregrina* L. . . .	9		„ „ „
„ *saxifraga* L. . . .	9		„ „ „
Sium Sisarum L.	10		„ „ „
(b) *Seselinae*			
Seseli tenuifolium LED. . . .	11		„ „ „
Foeniculum vulgare MILL. . .		22	MELDERIS, 1930.
Anethum graveolens L.	11		„ „
Oenanthe pimpinelloides L. . .	11		SCHULZ-GAEBEL, 1930.
Aethusa cynapium L.	11		„ „ „
Meum anthamanticum JACQ. .	11		„ „ „
Selinum carvifolia L.	11		„ „ „
PEUCEDANEAE			
(a) *Angelicinae*			
Levisticum officinale KOCH. . .	11		MELDERIS, 1930

	n	2n	
UMBELLIFERAE (continued)			
PEUCEDANEAE (continued)			
(a) *Angelicinae* (continued)			
Angelica Archangelica L. subsp. *litoralis* (FRIES.) THELLUNG	11		SCHULZ-GAEBEL, 1930.
Angelica silvestris L.		22	MELDERIS, 1930.
(b) *Ferulinae*			
Dorema Aucheri BOISS.	11		SCHULZ-GAEBEL, 1930.
Peucedanum gravedens KOCH.	11		„ „ „
„ *Oreoselinum* MÖNCH.	11		„ „ „
„ *palustre* (L.) MÖNCH.	11		„ „ „ ; MELDERIS, 1930.
„ *sativum* HOFFM.	11		SCHULZ-GAEBEL, 1930.
„ *verticillare* KOCH.	11		„ „ „
Pastinaca sativa L.		22	MELDERIS, 1930.
DAUCEAE			
Daucus carota L.	11		„ „
CORNACEAE			
Cornus alba	11		MEURMAN, 1930.
Aucuba chinensis	8	„	„ „
ERICALES			
ERICACEAE			
RHODODENDRON [1])			
Subgenus I. Eurhododendron			
Section I. Leiorhodion			
Rhododendron catawbiense	13		SAX, K., 1930*b*.
„ *catawbiense* MICHAUX	12		BOWERS, 1930.
„ *maximum*	13		SAX, K., 1930*b*.
Section II. Lepipherum			
Rhododendron carolinianum	13		„ „ „
Section IV. Rhodorastrum			
Rhododendron dauricum	13		„ „ „
Subgenus III. Anthodendron			
Section I. Tsutsutsi			
Rhododendron obtusum japonicum	13		„ „ „
„ *obtusum Kaempferi*	13		„ „ „
„ *yedoense poukhanense*	13		„ „ „
Section II. Sciadorhodion			
Rhododendron reticulatum	13		„ „ „
„ *Schlippenbachii*.	13		„ „ „

[1]) Classification is according to REHDER (1927).

ERICACEAE (continued)		
RHODODENDRON (continued)		
Subgenus III. Anthodendron (continued)		
Section III. Rhodora		
Rhododendron canadense . . .	26	SAX, K., 1930*b*
„ *Vaseyi*	13	„ „ „
Section IV. Pentanthera		
Rhododendron arborescens . . .	13	„ „ „
„ *calendulaceum* .	26	„ „ „
„ *japonicum* . . .	13	„ „ „
„ *roseum*	13	„ „ „
„ *viscosum* . . .	13	„ „ „
Rhododendron hybrids:		
Rhododendron albicans (*R. molle* × *R. occidentale*)	13	„ „ „
„ *gandavense* of Arnold Arboretum (American *azalea* × *R. luteum*)	13	„ „ „
„ *laetevirens* (*R. carolinianum* × *R. ferrugineum*)	$12+2_I$	„ „ „
„ *perspicum* (*R. catawbiense* × *R. maximum* or *R. ponticum*) .	13 or $12+2_I$	„ „ „
„ *praecox* var. *Early Gem* (*R. dauricum* × *R. ciliatum*) . . .	13	„ „ „
„ *purpureum* (*R. catawbiense* × *R. maximum* or *R. ponticum*) .	13	„ „ „
„ *Smirnovii* hybrid of Arnold Arboretum (*R. Smirnovii* × *Catawbiense* hybrid) . . .	$12+2_I$	„ „ „

	n	2n	
ERICACEAE (continued)			
Rhododendron hybrids (continued)			
Subgenus III. Anthodendron (continued)			
Section IV. Pentanthera (continued)			
Rhododendron viscosepalum (*R. molle* × *R. viscosum*)	$12+2_I$		Sax, K., 1930*b*
„ *occidentale* × *R. calendulaceum*	ca.$13+13_I$		„ „ „
„ *occidentale* × *R. japonicum*	13		„ „ „
PRIMULALES			
PRIMULACEAE			
Primula [1])			
Subgenus I.			
Section Grandis			
Primula grandis		44	Bruun, 1930.
Subgenus II.			
Section Auricula			
Primula auricula		56(?)	„ „
„ *glaucescens*		56(?)	„ „
„ *kisoana*		64(?)	„ „
„ *marginata*		90(?)	„ „
„ *minima*		64(?)	„ „
Subgenus III.			
Section Verticillata			
Primula floribunda		18	„ „
„ *„Kewensis"*		36	„ „
„ *verticillata*		18	„ „
Subgenus IV.			
Section Vernales			
Primula elatior		22	„ „
„ *heterochroma*		22	„ „
„ *Juliae*		22	„ „
„ *leucophylla*		22	„ „
„ *macrocalyx*		22	„ „
„ *pseudoelatior*		22	„ „
„ *veris*		22	„ „
„ *vulgaris*		22	„ „
Section Megaseaefolia			
Primula megaseaefolia		22	„ „

[1]) Classification is according to Smith & Forrest (1929).

PRIMULACEAE (continued)	n	2n	
PRIMULA (continued)			
Subgenus V.			
Section Cortusoides			
Subsection Geranioides			
Primula geraniifolia		22	BRUUN, 1930.
„ *heucherifolia*		22	„ „
„ *latisecta*		22	„ „
Subsection Septemlobae			
Primula Maclarenii		24	„ „
„ *mollis*		24	„ „
„ *seclusa*		24	„ „
„ *septemloba*		24	„ „
Subsection Pauliana e			
Primula Pauliana		24	„ „
Subsection Eucortusoides			
Primula cortusoides		24	„ „
„ *lichiangensis*		24	„ „
„ *polyneura*		24	„ „
„ *saxatilis*		24	„ „
„ *Sieboldii*		24	„ „
„ *Veitchii*		24	„ „
Section Reinii			
Primula Reinii		24	„ „
Section Pycnoloba			
Primula pycnoloba		24	„ „
Section Obconica			
Primula obconica	12	24	„ „
„ *sinolisteri*		24	„ „
„ *Werringtonensis*		24	„ „
Section Malacoides			
Primula effusa		18	„ „
„ *Forbesii*		18	„ „
„ *malacoides*	9	18	„ „
Section Sinensis			
Primula calciphila		24	„ „
„ *sinensis*		24	„ „
	12		SÖMME, 1930.
„ *sinensis* var. *gigas*		48(?)	BRUUN, 1930
„ *sinensis* (tetraploid)	14–24+ 22–20 [1])		SÖMME, 1930.

[1]) Quadrivalents were found in most cells but as a rule not more than 1 or 2. The majority of the chromosomes were arranged as bivalents.

PRIMULACEAE (continued)			
PRIMULA (continued)			
Subgenus VI.			
Section Bullatae			
Primula Forrestii		24	BRUUN, 1930.
„ *reidolens*		24	„ „
„ *rufa*		24	„ „
Subgenus VII.			
Section Petiolares			
Primula Wintoni.		22	„ „
Subgenus VIII.			
Section Nivales			
A. *Primula Ellisiae*		44	„ „
„ *leucops*		44	„ „
„ *Parryi*		44	„ „
„ *Rusbyi*		44	„ „
B. „ *Maximowiczii*. . .		22	„ „
„ *obliqua*		22	„ „
„ *szechuanica* . . .		22	„ „
„ *tangutica*		22	„ „
C. „ *macrophylla* . . .		22	„ „
D. „ *chionantha*		22	„ „
„ *melanops*		22	„ „
„ *Purdomii*		22	„ „
„ *russeola*		22	„ „
„ *sinoplantaginea* . .		22	„ „
Section Rotundifolia			
Primula Gambeliana		22	„ „
Section Candelabra . . .			
A. *Primula lanthina*		22	„ „
B. „ *anisodora*		22	„ „
„ *aurantiaca*		22	„ „
„ *Beesiana*.	11	22	„ „
		22	RICHARDSON, 1930.
„ *Bulleyana*	11	22	BRUUN, 1930.
		22	RICHARDSON, 1930.
„ *burmanica*	11	22	BRUUN, 1930.
„ *chungensis*		22	„ „
„ *Cockburniana* . .		22	BRUUN, 1930; RICHARDSON, 1930.
„ *helodoxa*		22	BRUUN, 1930.
„ *imperialis*		22	„ „
„ *japonica*		44	BRUUN, 1930; RICHARDSON, 1930.
„ *melanodonta*(?) . .		22	BRUUN, 1930.

PRIMULACEAE (continued)	n	2n	
PRIMULA (continued)			
Subgenus VIII. Section Candelabra (continued)			
B. *Primula Miyabeana*		22	BRUUN, 1930.
„ *Moorshcadiana*		22	„ „
„ *Poissonii*		22	„ „
„ *pulverulenta*		22	„ „ ; RICHARDSON, 1930.
„ *serratifolia*		22	BRUUN, 1930.
„ *Smithiana*	11	22	„ „
„ *Wilsonii*		22	„ „
„ *„Aileen Aroon"* (*P. Bulleyana* × *P. Beesiana*)		44	RICHARDSON, 1930.
„ *„Red Hugh"* (*P. pulverulenta* × *P. Cockburniana* F_1)		22	„ „
Section Sikkimensis			
A. *Primula secundiflora*		22	BRUUN, 1930.
„ *vittata*		22	„ „
B. *Primula firmipes*		22	„ „
„ *flexilipes*		22	„ „
„ *Florindae*		22	„ „
„ *microdonta alpicola*		22	„ „
„ *microdonta violacea*		22	„ „
„ *prionotes*		22	„ „
„ *pseudosikkimensis*	11	22	„ „
„ *pudibunda*		22	„ „
„ *sikkimensis*		22	„ „
„ *Waltonii*		22	„ „
Subgenus IX.			
Section Capitatae			
Primula capitata		18	„ „
„ *crispata*		18	„ „
„ *lacteocapitata*		18	„ „
„ *Moorcana*		18	„ „
„ *sphaerocephala*	9	18	„ „
Section Denticulata			
Primula crispa		44	„ „
„ *denticulata*	11	22	„ „
„ *erythrocarpa*		22	„ „
Section Muscarioides			
Primula apoclita		40	„ „
„ *atricapilla*		20	„ „

PRIMULACEAE (continued)	n	2n	
PRIMULA (continued)			
Subgenus IX. Section Muscarioides (continued)			
Primula bellidifolia		20	BRUUN, 1930.
„ *cernua*		20	„ „
„ *cyananthe*		40	„ „
„ *deflexa* (?)		40	„ „
„ *lepta*		40	„ „
„ *Littoniana*	10	20	„ „
„ *Menziesiana*		40	„ „
„ *muscarioides*		40	„ „
„ *pinnatifida*		20	„ „
Section Soldanelloideae			
Primula nutans		20	„ „
„ *Reidii*		20	„ „
Subgenus X.			
Section Cuneifolia			
Primula suffrutescens		44	„ „
Section Inayatii			
Primula Inayatii		16	„ „
Section Auriculata			
A. *Primula algida*		44	„ „
„ *lutcola*		44	„ „
B. *Primula elliptica*		22	„ „
„ *rosea*		22	„ „
Section Minutissimae			
Primula reptans		22	„ „
Subgenus XI.			
Section Soulei			
Primula rupicola		16	„ „
Section Farinosae			
Subsection Stenocalyces			
Primula blandula		16	„ „
„ *caldaria*		16	„ „
„ *Knuthiana*		16	„ „
„ *stenocalyx*		16	„ „
Subsection Eufarinosae			
Primula capitellata		72	„ „
„ *exigua*		18	„ „
„ *farinifolia*		18	„ „
„ *farinosa*	9	18	„ „
„ *farinosa Warei*		72	„ „
„ *Faurici*		18	„ „
„ *frondosa*		18	„ „

	n	2n	
PRIMULACEAE (continued)			
PRIMULA (continued)			
Subgenus XI. Section Farinosae (continued)			
Subsection Eufarinoşae (continued)			
Primula longiflora		36	BRUUN, 1930
„ *magellanica*		72	„ „
„ *scotica*		54	„ „
„ *scotica scandinavica*		72	„ „
„ *stricta*		126	„ „
Subsection Sibiricae			
Primula chrysopa		20	„ „
„ *fasciculata*		18	„ „
„ *involucrata*		44	„ „
„ *sibirica*		22	„ „
„ *tibetica*		20	„ „
„ *yargongensis*		20	„ „
Subsection Glabrae			
Primula Genestieriana		18	„ „
„ *glabra*		16	„ „
Section Yunnanensis			
Primula Yunnanensis		22	„ „
Aretia alpina L.		36	CHIARUGI, 1930*a*, *d*.
Vitaliana primuliflora BERTOL.		33	„ „ „
CONTORTAE			
OLEACEAE			
Forsythia europaea	14		O'MARA, 1930.
„ *intermedia*	14		„ „
„ *intermedia* var. *densiflora*	14		„ „
„ *intermedia* var. *primulina*	14		„ „
„ *intermedia* var. *spectabilis*	14		„ „
„ *intermedia* var. *vitellina*	14		„ „
„ *ovata*	14		„ „
„ *suspensa*	14		„ „
„ *suspensa* var. *atrocaulis*	14		„ „
„ *suspensa* var. *decipiens*	14		„ „
„ *suspensa* var. *Fortunei*	14		„ „

	n	2n	
OLEACEAE (continued)			
Forsythia (continued)			
Forsythia suspensa var. *patlida*	14		O'MARA, 1930.
„ *suspensa* var. *pubescens*	14		„ „
„ *suspensa* var. *Sieboldii*	14		„ „
„ *suspensa* var. *suspensa*	14		„ „
„ *viridissima*	14		„ „
„ *viridissima* var. *koreana*	14		„ „
SYRINGA [1])			
Subgenus Eusyringa (K. KOCH)			
Group Villosae (SCHNEID.)			
Syringa Henryi (LUTÈCE) (*S. villosa* × *S. Josikaea*)	23		SAX, K., 1930*a*.
„ *Josikaea*		46	„ „ „
	22		TISCHLER, 1930.
„ *Komarowi*	23		SAX, K., 1930*a*.
„ *Sweginzowii*	23		„ „ „
„ *tomentella*	23 or 24		„ „ „
„ *villosa*	23 or 24		„ „ „
„ *Wolfii*		46	„ „ „
„ *yunnanensis*	24 [2])	68 [2])	„ „ „
Group Vulgares (SCHNEID.)			
Syringa chinensis (*S. rothomagensis*) = (*S. persica-laciniata* × *S. vulgaris*)	ca. $12+\frac{12_I}{2}$		„ „ „
„ *chinensis* var. *cucullata*	ca. $12+\frac{12_I}{2}$		„ „ „
„ *chinensis* var. *Saugeana*	ca. $12+\frac{12_I}{2}$ [3])		„ „ „
„ *Meyeri*	23		„ „ „
„ *microphylla*	23 or 24(?)		„ „ „

[1]) Classification is according to REHDER (1927).

[2]) In one plant there were 24 chromosomes at metaphase and in another plant there were 68 chromosomes in the root-tips.

[3]) At diakinesis there were about 39 chromosomes but at metaphase usually 24 to 26, half of which were bivalents and half univalents.

	n	2n	
OLEACEAE (continued)			
SYRINGA (continued)			
Subgenus Eusyringa (K. Koch) (continued)			
Group Vulgares (continued)			
Syringa oblata Giraldii		23, 24 [1]	SAX, K., 1930*a*.
„ *Paibiniana*		24	„ „ „
„ *persica*		44_I	TISCHLER, 1930.
		2	
		36_I [2]	SAX, K., 1930*a*.
		2	
„ *persica* var. *alba*		36_I [2]	
		2	„ „ „
„ *persica* var. *laciniata*		36_I [3]	„ „ „
		2	
„ *pinnatifolia*		24	„ „ „
„ *pubescens*		24	„ „ „
„ *velutina*		23	„ „ „
„ *(velutina) Koehneana*		23	„ „ „
„ *vulgaris*		22	TISCHLER, 1930.
„ *vulgaris* var. *Beranger.*		24	SAX, K., 1930*a*.
„ *vulgaris* var. *Dr. Nobbe*		$23+1_I$	„ „ „
„ *vulgaris* var. *Princess Marie*		$23+1_I$	„ „ „
Subgenus Ligustrina (RUPR.)			
Syringa amurensis		22	TISCHLER, 1930.
		23 or 24	SAX, K., 1930*a*.
„ *japonica*		23 or 24	„ „ „
Syringa (not classified in groups)			
Syringa Emodi		22	TISCHLER, 1930.
Ligustrum sp.		24	O'MARA, 1930.
TUBIFLORAE			
LABIATAE			
GALEOPSIS			
Subgenus Ladanum REICHB.			
Galeopsis angustifolia GAUDIN		8	MÜNTZING, 1930*a*.
„ *Ladanum* L.		8	„ „
„ *ochroleuca* LAMARCK		8	„ „
„ *pyrenaica* BARTL.		8	„ „

[1]) There were apparently 24 paired chromosomes at diakinesis but only 23 could be counted at the heterotypic metaphase.

[2]) The 36 single chromosomes behaved irregularly at reduction and the pollen was sterile. It was therefore thought to be a hybrid.

[3]) In one cell about 44 chromosomes were counted.

	n	2n		
LABIATAE (continued)				
GALEOPSIS (continued)				
Subgenus Tetrahit REICHB.				
Galeopsis bifida BOENN. [1]). . .	8		MÜNTZING,	1930*b*.
„ *pubescens* BESS . . .	8		„	„
„ *pubescens* (2 biotypes)		16	„	„
„ *Reuteri* REICHB. F. .		16	„	„
„ *speciosa* MILL. [1]) . .	8		„	1930*a*.
„ *speciosa* (3 biotypes).		16	„	1930*b*.
„ *Tetrahit* L.	8		„	1930*a*.
Galeopsis hybrids:				
Galeopsis angustifolia × *G. ochroleuca* F_1 [2]). . .	8 [3])		„	„
„ *Ladanum* × *G. angustifolia* F_1 [2]) . . .	8		„	„
„ *Ladanum* × *G. ochroleuca* $F_1 F_2$ [2]) . . .	8		„	„
„ *Ladanum* × *G. pyrenaica* $F_1 F_2$ [2]) . . .	8	16 [4])	„	„
„ *ochroleuca* × *G. pyrenaica* F_1 [2])	8	16	„	„
„ *pubescens* × *G. speciosa* F_1	$8, 7+2_1$			
	$6+4_1$	$5+6_1$	„	„
„ *pubescens* × *G. speciosa* spont. (offspring)		16	„	„
„ *pubescens* × *G. speciosa* F_2 [5])	8		„	„
„ *pubescens* × *G. speciosa* F_2 [5]) (one plant)	4_3+4+4_1			
	2_3+6+6_2	24	„	„
„ *pubescens* × *G. speciosa* $F_2 F_2$	$9+6_1$	16	„	1930*b*.
„ *Tetrahit* × *G. bifida* F_1 [6])	16		„	1930*a*.

[1]) The haploid number was determined in several types of the species.
[2]) Chromosome affinity and reduction division was quite normal.
[3]) This number was found in the spontaneous hybrid also.
[4]) This number was found also in one extreme dwarf plant of the cross.
[5]) Of 6 F_2 plants 5 were diploid and one was triploid.
[6]) The reduction division was quite normal, though it showed some minor irregularities.

	n	2n	
LABIATAE			
Galeopsis hybrids (continued)			
Galeopsis Tetrahit × *G. bifida* F_2 F_3 [1])	16		
	$15+2\frac{1}{2}$		
	$13+6\frac{1}{2}$		MÜNTZING, 1930*a*.
„ A.T. (*artifizielle Tetrahit*) = (*G. pubescens* × *G. speciosa*) × *G. pubescens* . .	16	32	„ 1930*b*.
Mentha aquatica L. (= *M. hirsuta* L.)	18		LIETZ, 1930.
„ *arvensis* L.	36(?)		„ „
„ *longifolia* L. HUDSON .	9		„ „
„ *verticillata* L. [= *M. aquatica* × *M. arvensis* (*M. sativa* L.)]. .	27		„ „
SOLANACEAE			
Saracha umbellata		48	KRENKE, 1930.
Capsicum annuum [2])	12		HUSKINS & LA COUR, 1930.
Capsicum annuum var. *Dolma*[3])	12	24	KOSTOFF, 1930*a*.
„ *annuum* var. *Kamby* [3])	12	24	„ „
„ *annuum* (*Dolma* × *Kamby*) F_1	12	24	„ „
„ *annuum* (*Dolma* × *Kamby*) F_2 „orange mutant"	12	24	„ „
„ *annuum* (buds with abnormal pollen selfed)			
Plant I	12	25	„ „
Plant II	11	25	„ „

[1]) Some of the extremely narrow-leaved and broad-leaved F_2 and large-flowered F_3 plants showed the same number (n = 16).

[2]) Four varieties described as: long red, large red, long yellow and large yellow from Messrs. Sutton & Sons were used. Also four varieties described as: pigment gros long changeant, pigment jaune demi-long d'Antibes, pigment jaune long, pigment cerise from Messrs. Vilmorin et Cie.

[3]) Plants exposed to change of temperature showed irregular meiosis with varying numbers of chromosomes in the gametes as n, n—a, n+a, 2n, 2n+a, 3n, 3n+a and 4n, where n is any number smaller than 12.

	n	2n	
SOLANACEAE (continued)			
Capsicum (continued)			
Capsicum baccatum [1])	12		HUSKINS & LA COUR, 1930.
SOLANUM [2])			
Section Tuberarium			
Subsection Basarthrum BITT.			
Solanum muricatum AIT. . . .		24	RYBIN, 1930*a*.
Subsection Hyperbasarthrum BITT.			
Conicibaccata BITT. (Colombia forms)			
Solanum colombianum DUN.			
var. *Triunae* BITT. n. f. . .		48	RYBIN, 1930.
Pinnatisecta RYDB. Group 2			
Solanum chacoense BITT. . . .	12		LONGLEY & CLARK, 1930.
		24	RYBIN, 1930*a*.
„ *Commersonii* DUN. .	18 [3])		LONGLEY & CLARK, 1930.
		36	RYBIN, 1930*a*.
„ *coyoacanum* BUKASOV		36	„ „
„ *Jamesii* TORR. . . .	12		LONGLEY & CLARK, 1930.
		24	RYBIN, 1930*a*.
Group 3			
a) Subgroup from Chile and Peru lowlands			
Solanum medians BITT. (Of *Solanum Maglia* SCHLECHT)		36	RYBIN, 1930*a*.
Solanum palustre POEPP.? . .		48	„ „
b) Subgroup from Peru and Bolivia Andes			
Solanum acaule BITT. var. *subinterruptum* BITT. . . .		48	„ „
Solanum araco-papa JUZ. n. s. .		24	„ „
„ *Bukasovii* JUZ. n. s. .		24	„ „
„ sp. *Curao* 150		36	„ „
„ sp. *Curao* 151		48	„ „
c) Subgroup of Mexican species			
Solanum ajuscoense BUKASOV .	24		LONGLEY & CLARK, 1930.
		48	RYBIN, 1930*a*.
„ *Antipovichi* BUKASOV	24		LONGLEY & CLARK, 1930.
		48	RYBIN, 1930*a*.
„ *demissum* LINDL. . .	36		LONGLEY & CLARK, 1930

[1]) Two varieties described as long red and long yellow.
[2]) Classification is according to BITTER 1912—13.
[3]) Irregular distribution of the chromosomes was observed.

SOLANACEAE (continued)	n	2n	
SOLANUM (continued)			
Solanum demissum f. *adpresso-acuminatum* BUKASOV		72	RYBIN, 1930*a*.
„ *demissum* f. *longibaccatum* BUKASOV . .		72	„ „
„ *demissum* f. *recurvo-acuminatum* BUKASOV		72	„ „
„ *demissum* f. *tlaxpehualcoense* BUKASOV . .		72	„ „
„ *demissum* f. *xitlense* BUKASOV		72	„ „
„ *Fendleri* GRAY . . .	24		LONGLEY & CLARK, 1930.
		48	RYBIN, 1930*a*.
Section?			
Solanum caldasii glabrescens DUNAL	12		LONGLEY & CLARK, 1930.
„ *capsicastrum* [1]) . . .	12		HUSKINS & LA COUR, 1930.
„ *cardiophyllum* f. *coyoacanum* BUKASOV	18 [2])		LONGLEY & CLARK, 1930.
„ *lycopersicum*		24	KRENKE, 1930.
		48 [3])	KOSTOFF, 1930*b*.
„ *polyadinum* GREENM.	12		LONGLEY & CLARK, 1930.
„ *tuberosum* L.			
(commercial American varieties):			
Adirondack.	24		LONGLEY & CLARK, 1930.
American giant	24		„ „ „ „
Beauty of Hebron	24		„ „ „ „
Blue Victor	24		„ „ „ „
Carman No. I	24		„ „ „ „
Charles Downing	24		„ „ „ „
Cowhorn	24		„ „ „ „
Dakota red	24		„ „ „ „
Early Manistee	24		„ „ „ „
„ Ohio	24		„ „ „ „
„ Rose	24		„ „ „ „
„ Sunrise, Buist's . . .	24		„ „ „ „
Garnet Chili	24		„ „ „ „
Green Mountain	24		„ „ „ „
Irish Cobbler	24		„ „ „ „
Jersey Red Skin.	24		„ „ „ „

pla
[2]) from
long ch
cerise fro variety is described as large berried and of unknown origin.
[3]) Plan ular distribution of the chromosomes was observed.
numbers ie callus tissue of a scion of *Solanum lycopersicum* growing on *Nicotiana*
and 4n, wa tetraploid cell was found.

SOLANACEAE (continued)	n	2n	
Solanum tuberosum L. (commercial American varieties) (continued)			
Keeper	24		LONGLEY & CLARK, 1930.
King of the Roses	24		" " " "
Maggie Murphy	24		" " " "
McCormick	24		" " " "
McCulloch	24		" " " "
Never Rot	24		" " " "
Noroton Beauty	24		" " " "
Peachblow	24		" " " "
Peerless	24		" " " "
Peerless (Pearl)	24		" " " "
Peoples	24		" " " "
Perfect Peachblow	24		" " " "
Pride of Multnomah	24		" " " "
Prince Albert	24		" " " "
Prolific	24		" " " "
Queen of the valley	24		" " " "
Russet Rural	24		" " " "
Scotch Rose	24		" " " "
Triumph	24		" " " "
White Albino	24		" " " "
S. A. Yellow Flesh	12		" " " "
Seedling No. 43225	24		" " " "
" No. 43986	24		" " " "
Solanum tuberosum L. (German varieties):			
Ackersegen	24		HEYN, 1930.
Albiora		48	" "
Anna	24		" "
Allerfrüheste Gelbe	24		" "
Beseler	24		" "
Centifolia	24		" "
Deodara	24	48	" "
Derfflinger	24		" "
Dicke Muis		48	" "
Eigenheimer	24		" "
Erdgold	24	46	" "
Erstling Duke of York	ca. 24		" "
Frühe Rose	24		" "
Früheste	ca. 24		" "
Fürstenperle		48	" "
Gelbe Rosen	ca. 24		" "
Gelkaragis		48	" "

	n	2n	
SOLANACEAE (continued)			
Solanum tuberosum L. (German varieties) (continued)			
Gisevius (Prof.)		48	HEYN, 1930.
Herbstrote		48	" "
Hutten	24	48	" "
Ideaal		48	" "
Imperator	24		" "
Industrie	24	48	" "
Johannsen (Dir.)	24		" "
Jubel	24		" "
Juli	24		" "
Kartz v. Kameke	24		" "
Königsniere	ca. 24		" "
Krüger (Praes.)	24		" "
Laurus	24		" "
Malta	24		" "
Model	24		" "
Odenwälder Blaue	ca. 24		" "
Parnassia	24		" "
Pepo	24	48	" "
Pruessen	24		" "
Prozentragis		48	" "
Ragiszehn		48	" "
Rosafolia	24		" "
Rotkaragis	24	48	" "
Schenkendorf		48	" "
Sickingen		48	" "
Silberperle	24 probably		" "
Sonnenragis	24	48	" "
Tafelperle		48	" "
Up to Date		48	" "
Vesta	24		" "
Wekaragis	ca. 24		" "
Welkersdorfer	24		" "
Wohltmann (Prof.)		48	" "
Solanum tuberosum L. native varieties:			
from Mexico			
one from villa Hermosa		48	RYBIN, 1930*a*.
from Guatemala			
one from Guatemala city		48	" "
from Colombia			
Caiceda		48	" "
De año		48	" "
Lisarasa		48	" "

SOLANACEAE (continued)	n	2n	
Solanum tuberosum L. native varieties			
from Colombia (continued)			
Paua		48	RYBIN, 1930*a*.
Tuquereña		48	„ „
18 unnamed collections		48	„ „
1 unnamed collection		24	„ „
from central Peru			
Chusca		24	„ „
Cota Cuya		48	„ „
Curao blanco		48	„ „
Huairuru		48	„ „
Milagro		48	„ „
Naranjito		48	„ „
Pampino		48	„ „
Papa amarilla		24, 48 [1])	„ „
Papa blanca		24, 48 [2])	„ „
Pepinilla		48	„ „
Pina		48	„ „
Puca papa		36	„ „
Runtu papa		24	„ „
Yana mata		48	„ „
Yana papa		36, 48 [3])	„ „
14 unnamed collections		48	„ „
1 unnamed collection		24	„ „
from south Peru			
Alalaiso		48	„ „
Alcca-huarmi		48	„ „
Anaibamba		48	„ „
Ancace-maquin		48	„ „
Ancace-sillon		48	„ „
Ccoec-compadre		48	„ „
Ccohuaisure		48	„ „
Ccompetillo		48	„ „
Ccompis		48	„ „
Ccosilinll		24	„ „
Ccusi		48	„ „
Cchecche-pfuru		36	„ „
Chicchina		36	„ „
Chimo-lomo		36	„ „
Chocllo		48	„ „
Ckeccorani		24	„ „

[1]) Two forms showed 48 while ten showed 24 chromosomes.
[2]) Three forms showed 48 while one showed 24 chromosomes.
[3]) Three forms showed 48 while one showed 36 chromosomes.

SOLANACEAE (continued)	n	2n	
Solanum tuberosum L. native varieties *from south Peru* (continued)			
Ckello-huaccotto		48	RYBIN, 1930a
Cuculi-cintura		48	„ „
Cuchillo ppaqui		48	„ „
Garmendia		48	„ „
Huairuru		48	„ „
Huallata		48	„ „
Huaman-uma		48	„ „
Huana		48	„ „
Jacco ekchuillo		36	„ „
Lecke uma		48	„ „
Macctacha		48	„ „
Mayo-mostasillo		48	„ „
Mocco senco		48	„ „
Mocketa		48	„ „
Muru-chire		24	„ „
Muru-ccompis		48	„ „
Muru-leckecho		36	„ „
Ocke-lomo		48	„ „
Ocke-sale		48	„ „
Ocke-suittu		48	„ „
Ocke-sunchchu		48	„ „
Ocke tecomera		48	„ „
Ocke trompos		48	„ „
Orcco malcco		36	„ „
Paspa-sunchchu		48	„ „
Pispinco		36	„ „
Ppaspa sunchchu		48	„ „
Puca ccompis		48	„ „
Puca licella		48	„ „
Puca mama		36(48)	„ „
Puca ñahui		48	„ „
Puca ppitiquiña		24	„ „
Puca pullon		36	„ „
Puca-socco-huaccotto		36	„ „
Puca sunchchu		48	„ „
Socco huaccotto		36	„ „
Socco mama		48	„ „
Suittu		36	„ „
Sunchchu tacella		48	„ „
Tccomima		48	„ „
Trompos		48	„ „
Ttata		48	„ „

SOLANACEAE (continued)	n	2n	
Solanum tuberosum L. native varieties			
from south Peru (continued)			
Tumbos		48	RYBIN, 1930a.
Una-ccompis		48	„ „
Yana-ana		48	„ „
Yana-ckecco		48	„ „
Yana-huana		48	„ „
Yana-lomo		48	„ „
Yana-suittu		48	„ „
Yurac-huallica		48	„ „
Yurac-lomo		36	„ „
Yurac-mama		48	„ „
Yurac-suittu		48	„ „
Yurac-ssunchchu		48	„ „
from Bolivia			
Aja huiri (Ajanhuiri)		24	„ „
Chiar imilla		48	„ „
Cjati		24, 36 [1])	„ „
Jancko immilla		48	„ „
Kaisalla		36	„ „
Monda		48	„ „
Phitikalla		48	„ „
Phureja		24, 48 [2])	„ „
Phifu		24	„ „
Surimana		36	„ „
two unnamed forms		24	„ „
one unnamed form		48	„ „
from Chile			
Araucana blanca		48	„ „
Caballera		48	„ „
Cabra		48	„ „
Francesca blanca		48	„ „
Guapa		48	„ „
Guapa chilena		48	„ „
„Huacha"		48	„ „
Mahuihue		48	„ „
Mantequilla		48	„ „
„Mantequilla rosada"		48	„ „
Nalca		48	„ „
Papa america		48	„ „
„ azul		48	„ „
„ bolera		48	„ „

[1]) One form showed 36 and two forms showed 24 chromosomes.
[2]) One form showed 48 and seven forms showed 24 chromosomes.

SOLANACEAE (continued)	n	2n	
Solanum tuberosum L. native varieties *from Chile* (continued)			
Papa cabra		48	RYBIN, 1930*a*.
„ cauchao		48	„ „
„ cebolla		48	„ „
„ guapa		48	„ „
„ lline		48	„ „
„ palmata		48	„ „
„ pichuña		48	„ „
„ pirihuana		48	„ „
„ rosada		48	„ „
„ temprana		48	„ „
„ villaroela		48	„ „
Rinones		48	„ „
„Siete semanas"		48	„ „
Villarroela		48	„ „
so-called „wild potato"		48	„ „
9 unnamed forms		48	„ „
Solanum hybrids:			
Solanum caldasii glabrescens × *S. chacoense*	12		LONGLEY & CLARK, 1930.
Solanum demissum? (from KNAPPE — probably hybrid)		60	RYBIN, 1930*a*.
Solanum demissum × Majestic („Caliban" KNAPPE)		60	„ „
Solanum — „Caliban" × Mirdza		48	„ „
Solanum edinense BERTH. (= *etuberosum* SUTTON)		60	„ „
Solanum fendleri × *S. chacoense*	18 [1]		LONGLEY & CLARK, 1930.
Solanum Lycopersicum var. Dwarf Aristocrat F_1 (2n = 24 × 2n = 26)	$\frac{74—124}{+10—0}$ [2] / 2		LESLEY & LESLEY, 1930.
Solanum tuberosum L. × *S. utile* KLOTZSCH (= *demissum* LINDL. var. *Klotzschii* BITT.) from VILMORIN		48	RYBIN, 1930.
Datura Stramonium L.		24	LEVITSKY, 1930.
Nicctiana alata	9		LAWRENCE, 1930; KOSTOFF, 1930*d*.

[1]) Irregular distribution of the chromosomes was observed.

[2]) In no case were 24 pairs of chromosomes seen at first metaphase and no first metaphase was seen with less than 7 quadrivalents. 12 quadrivalents were rarely observed.

SOLANACEAE (continued)	n	2n	
Nicotiana (continued)			
Nicotiana attenuata	12		KOSTOFF, 1930*d*.
„ *glauca*	12		„ „
„ *glutinosa*	12		„ „
	12	24	LEVINE, 1930.
„ *glutinosa* (crown gall tissue)		24, 48, 96 [1]	LEVINE, 1930.
„ *Langsdorfii*	9		KOSTOFF, 1930*d*.
„ *Langsdorfii* (scion on *Solanum nigrum*)		18 [2]	KOSTOFF, 1930*a*.
„ *Langsdorfii* (scion on *Solanum nigrum* selfed)			
plants 1002, 1003, 913		18 [2]	KOSTOFF, 1930*a*.
plant 1003		19 [2]	„ „
plant 962		25 [2]	„ „
plant 1004		21 [2]	„ „
plant 1003 (selfed)			
1003/22		17 [2]	„ „
1003/30	9	18	„ „
Nicotiana longiflora	10		KOSTOFF, 1930*d*.
„ *Palmeri*	12		„ „
„ *paniculata*	12		„ „
„ *Rusbyi*	12		„ „
„ *rustica*	24		„ „
„ *Sanderae*	9		LAWRENCE, 1930; KOSTOFF, 1930*d*.
„ *suaveolens*	16		KOSTOFF, 1930*d*.
„ *sylvestris*	12		„ „
		24 [3]	WEBBER, 1930*b*.
„ *Tabacum*	24		KOSTOFF, 1930*d*.
„ *Tabacum* (haploid) [4]	$\frac{24_1}{2}$	24	CHRISTOFF, 1930*d*.
„ *Tabacum* (aberrant)	72		KOSTOFF, 1930*d*.
„ *Tabacum* normal carmine	24		CLAUSEN, R., 1930.
„ *Tabacum* normal coral	24		„ „ „
„ *Tabacum* fluted carmine	$23+1_1$ [5]		„ „ „

[1] The majority of cells had 24 (the diploid number) of chromosomes.
[2] Irregularities in meiosis were found.
[3] Certain areas in root-tips showed 48 chromosomes.
[4] One plant among 1470 was isolated because of a dwarf habit and was found to be a haploid plant.
[5] The univalent chromosome is designated an F. chromosome.

SOLANACEAE (continued)	n	2n	
Nicotiana (continued)			
Nicotiana Tabacum fluted coral	$23+1_I$ [1]		CLAUSEN, R., 1930.
„ *Tabacum* normal carmine-coral	24 + frag.		„ „ „
„ *Tabacum* fluted carmine-coral	$23+1_I$ [3], + frag.		„ „ „
„ *Tabacum* carmine-coral variegated	24 + frag.		„ „ „
„ *Tabacum sanguinea*	24		KOSTOFF, 1930*d*.
„ *Tabacum wigand*	24		„ „
„ *Tabacum* var. *purpurea*	24		GOODSPEED, 1930*a*, *b*.
„ *Tabacum* var. *purpurea* (X-rayed progeny)			
one haploid plant	12		GOODSPEED, 1930*a*.
plants showing pistillody	24		„ „
plants showing chlorophyll deficiency	$22+1_{III}+1_I$		„ „
plants showing pink flowered variants	24, 24 + frag.		„ „
one triploid plant	ca. 36		„ 1930*b*.
other progeny	$24+1_I$		„ „
	$23+1_I$		„ „
Nicotiana Tabacum var. „Maryland" Mammoth (X-rayed progeny) one tetraploid shoot	ca. 48		„ „
Nicotiana Tabacum (progenies of tissues treated by X-ray and radium)	24,25, 28 [2] units		GOODSPEED & AVERY, 1930.
Nicotiana Tabacum (progeny of X-rayed plants)	$23+1_I$, $24+1_I$ [3]		GOODSPEED, 1930*c*.
Nicotiana Tabacum (scion on *Datura Wrightii*.	24 [4]		KOSTOFF, 1930*a*.

[1]) The modified univalent chromosome is designated F-co.

[2]) The number of units is the result of attachment, translocation, deletion, fragmentation and altered valency of the chromosomes.

[3]) At meiosis of first generation progenies from X-rayed plants, fragmentation, non-conjunction and conditions of unpaired and additions of fusions of chromosomes occurred. The result most frequently gave monosomics.

[4]) Irregularities in meiosis were found.

	n	2n	
SOLANACEAE (continued)			
Nicotiana (continued)			
Nicotiana Tabacum (selfed on *Datura Wrightii*) .			
selfed plant C	36 [1]	72	KOSTOFF, 1930*a*.
plant D	35–40 [1]	59	„ „
plant G (selfed)	24–27 [1]		„ „
	32, 34–36,		„ „
	38, 40–42		„ „
Nicotiana tomentosa	12		„ 1930*d*.
Nicotiana hybrids: [2]			
Nicotiana glauca × *N. alata* .	$\frac{21_I}{2}$		„ „
„ *glauca* × *N. Langsdorfii*	$\frac{21_I}{2}$		„ „
„ *glauca* × *N. longiflora*	$\frac{22_I}{2}$		„ „
„ *glauca* × *N. Rusbyi*	12		„ „
„ *glauca* × *N. Sanderae*	$\frac{21_I}{2}$		„ „
„ *glauca* × *N. Tabacum*	$\frac{36_I-(38_I)}{2}$		„ „
„ *glauca* × *N. tomentosa*	$\frac{24_I}{2}$		„ „
„ *glutinosa* × *N. glauca*	$\frac{24_I}{2}$		„ „
„ *Langsdorfii* × *N. alata*	9		„ „
„ *Langsdorfii* × *N. glauca*	$\frac{21_I}{2}$		„ „
„ *Langsdorfii* × *N. Sanderae*	9		„ „
„ *paniculata* × *N. glauca*	$\frac{24_I}{2}$		„ „

[1]) Irregularities in meiosis were found.

[2]) Where a fractional number with denominator = 2 is used from KOSTOFF, 1930*d* the numerator used is the sum of the chromosomes in late heterotypic metaphase. This plan was adopted since the valency of numbers in early heterotypic metaphase was not designated.

SOLANACEAE (continued)	n	2n	
Nicotiana hybrids (continued)			
Nicotiana paniculata × *N. Langsdorfii*	$21_{\frac{1}{2}}$		KOSTOFF, 1930*d*.
„ *paniculata* × *N. rustica*	$36_{\frac{1}{2}}$		„ „
„ *paniculata* × *N. Tabacum*	$36_{\frac{1}{2}}$		„ „
„ *Rusbyi* × *N. glauca*	12		„ „
„ *Rusbyi* × *N. sylvestris*	$24_{\frac{1}{2}}$		„ „
	$24_{\frac{1}{2}}$	24	BRIEGER, 1930.
„ *Rusbyi* × *N. tomentosa*	12		KOSTOFF, 1930*d*.
	12	24	BRIEGER, 1930.
„ *rustica* × *N. alata*	$33_{\frac{1}{2}}$		KOSTOFF, 1930*d*.
„ *rustica* × *N. attenuata*	$36_{\frac{1}{2}}$		„ „
„ *rustica* × *N. Langsdorfii*	$33_{\frac{1}{2}}$		„ „
„ *rustica* × *N. Palmeri*	$36_{\frac{1}{2}}$		„ „
„ *rustica* × *N. paniculata*	$36_{\frac{1}{2}}$		„ „
„ *rustica* × *N. Sanderae*	$33_{\frac{1}{2}}$		„ „
„ *rustica* × *N. Tabacum*	24		„ „
„ *sylvestris* × *N. Rusbyi*	$24_{\frac{1}{2}}$		„ „
Tabacum × *N. alata*	$33_{\frac{1}{2}}$		„ „
„ *Tabacum* × *N. glauca*	$36_{\frac{1}{2}}$–($38_{\frac{1}{2}}$)		„ „

SOLANACEAE (continued)	n	2n	
Nicotiana hybrids (continued)			
Nicotiana Tabacum × *N. Kushyi*	$\frac{36_I}{2}$		KOSTOFF, 1930*d*.
	$\frac{12+12_I}{2}$	36	BRIEGER, 1930.
„ *Tabacum* (n = 72) × *N. rustica* . . .	various		KOSTOFF, 1930*d*.
„ *Tabacum* × *N. sylvestris*	$\frac{12+12_I}{2}$	36	BRIEGER, 1930.
	$\frac{36_I}{2}$		KOSTOFF, 1930*d*.
		36, 72 [1]	RYBIN, 1930*b*.
„ *Tabacum* × *N. sylvestris* F_2		48	RYBIN, given by EGHIS, 1930.
„ *Tabacum* × *N. sylvestris* (n426/16c) .		60	RYBIN, given by EGHIS, 1930.
„ *Tabacum* × *N. sylvestris* (n426/36c) .		48	RYBIN, given by EGHIS, 1930.
„ *Tabacum sanguinea* × *N. Sanderae* . .	$\frac{33_I}{2}$		KOSTOFF, 1930*d*.
„ *Tabacum wigand* × *N. Sanderae* . . .	$\frac{33_I}{2}$		„ „
„ *Tabacum var. purpurea* × (*N. Tabacum* × *N. sylvestris* F_1 n = 12) „*sesquidiploid hybrid*" . . .	$\frac{24+12_I}{2}$		
	$3_3+\frac{21+9_I}{2}$	60	WEBBER, 1930*a*.
„ — „*sesquidiploid hybrid*" × *N. Tabacum*	$\frac{2\text{-}4+1_I\text{-}9_I}{2}$		„ „
„ — „*sesquidiploid hybrid*" × *N. sylvestris*	$1_3\text{-}7_3+11\text{-}5+\frac{12_I}{2}$		„ „

[1] The hybrid with 2n = 36 generally showed an extremely irregular meiosis while the tetraploid form with 2n = 72 showed an almost regular meiosis. 28 to 36 units were seen at metaphase of the latter due to the presence of polyvalent chromosomes.

	n	2n	
SOLANACEAE (continued)			
Nicotiana hybrids (continued)			
Nicotiana — „*sesquidiploid hybrid*" *selfed progenies*	24–29 + $\frac{8_I-1_I}{2}$		WEBBER, 1930*a*.
„ *Tabacum* × *N. tomentosa*	$\frac{36_I}{2}$		KOSTOFF, 1930*d*.
	$12+\frac{12_I}{2}$	36	BRIEGER, 1930.
(„ *Tabacum* × *N. Rusbyi*) × *N. sylvestris*	24	48	„ „
„ *tomentosa* × *N. glauca*	$\frac{24_I}{2}$		KOSTOFF, 1930*d*.
„ *tomentosa* × *N. Rusbyi*	12		„ „
„ *tomentosa* × *N. sylvestris*	$\frac{24_I}{2}$		„ „
	$\frac{24_I}{2}$	24	BRIEGER, 1930.
. *glauca* × *Petunia violacea*	$\frac{36_I}{3}$ [1]		KOSTOFF, 1930*d*.
„ *rustica brasilia* × *Petunia violacea*. .		48	„ „
„ *rustica humilis* × *Petunia violacea*. .		48	„ „
„ *rustica texana* × *Petunia violacea* . . .		48	„ „
(„ *rustica brasilia* × *N. rustica texana*) × *Petunia violacea* .		48	„ „
(„ *rustica humilis* × *N. rustica brasilia*) × *Petunia violacea*. .		48	„ „
(„ *rustica texana* × *N. rustica humilis*) × *Petunia violacea*. .	48		„ „

[1]) Triploid endosperm was developed when fertilization occurred but only diploid endosperm when the pollen tube induced parthenocarpic development of the endosperm.

	n	2n	
SOLANACEAE (continued)			
Nicotiana hybrids (continued)			
Nicotiana Tabacum (2n = 72)			
× *Petunia violacea*	40 [1])		KOSTOFF, 1930*d*.
Petunia violacea (diploid race)	7		LAWRENCE, 1930; RIEDE, 1930.
	7	14	KOSTOFF, 1930*c*, *d*.
„ *violacea* (tetraploid race)	14		LAWRENCE, 1930; RIEDE, 1930.
	14	28	KOSTOFF, 1930*c*.
„ *violacea* „Sutton's New Blue Bedding" . . .		14	MATSUDA, 1930.
„ *violacea* „Sutton's Leviathan"		28	„ „
„ *violacea* (scion on *Solanum nigrum*)		14 [2])	KOSTOFF, 1930*a*.
„ *violacea* (diploid × tetraploid)	7–21 units		RIEDE, 1930.
SCROPHULARIACEAE			
Verbascum phoeniceum	16		LAWRENCE, 1930.
Linaria vulgaris	6		„ „
Antirrhinum hispanicum . . .	8		„ „
„ *molle*	8		„ „
Torenia asiatica L.	8	16	SIMON & LOWIG, 1930.
„ *Baillonii*	8	16	„ „ „ „
„ *edentula*	9	18	„ „ „ „
„ *Fournieri* (type-violet)	9	18	„ „ „ „
„ *Fournieri* var. *alba* . .	9	18	„ „ „ „
„ *Fournieri* var. *alba* mut. *compacta* . . .	9	18	„ „ „ „
„ *Fournieri* var. *alba* mut. *gracilis*	9		„ „ „ „
„ *Fournieri* (type-violet) × *T. Fournieri* var. *alba* mut. *compacta* .	9	18	„ „ „ „
Alectorolophus hirsutus	7	14	WILCKE, 1930.
Lathraea squamaria L.	16		RUDENKO, 1930.
PLANTAGINALES			
PLANTAGINACEAE			
Plantago lanceolata L.	12		NAKAJIMA, 1930.
„ *major* L.	12		„ „

[1]) Gametes with various chromosome numbers were found. Occasionally those with 3, 4 and 6 and with 80 (dyads) or 160 (nomads) chromosomes were found.

[2]) Irregularities in meiosis were found.

RUBIALES	n	2n	
CAPRIFOLIACEAE			
SAMBUCUS [1])			
Section Eusambucus			
Sambucus canadensis	18		SAX & KRIBS, 1930.
„ *nigra*	18		„ „ „ „
Section Botryosambucus			
Sambucus racemosa	18	36	„ „ „ „
VIBURNUM [1])			
Section Lantana			
Viburnum Lantana	9		„ „ „ „
Section Pseudotinus			
Viburnum alnifolium	9		„ „ „ „
Section Pseudopulus			
Viburnum tomentosum	9		„ „ „ „
Section Leutago			
Viburnum Lentago	9		„ „ „ „
„ *prunifolium*	9		„ „ „ „
Section Odontotinus			
Viburnum acerifolium	9		„ „ „ „
„ *hupehense*	9		„ „ „ „
„ *lobophyllum*	9		„ „ „ „
Section Opulus			
Viburnum opulus	9	18	„ „ „ „
„ *Sargenti*	9		„ „ „ „
„ *trilobum*	9		„ „ „ „
Symphoricarpus orbiculatus		18	„ „ „ „
Abelia Engleriana	16		„ „ „ „
„ *Schumannii*		ca. 32	„ „ „ „
Kolkwitzia amabilis	16	32	„ „ „ „
LONICERA [1])			
Subgenus I. Chamaecerasus			
Section Isoxylosteum			
Lonicera Thibetica	9–18		„ „ „ „
Section Isika			
Lonicera Altmannii	9		„ „ „ „
„ *coerulea*	9–18		„ „ „ „
„ *Ferdinandi*	9		„ „ „ „
„ *fragrantissima*	9		„ „ „ „
„ *microphylla*	18		„ „ „ „
„ *orientalis*	9		„ „ „ „
„ *tenuipes*	18		„ „ „ „
Section Coeloxylosteum			
Lonicera chrysantha	9	18	„ „ „ „

[1]) Classification is according to REHDER (1927).

CAPRIFOLIACEAE (continued)	n	2n	
LONICERA (continued)			
Section Coeloxylosteum (continued)			
Lonicera demissa	9		SAX & KRIBS, 1930.
„ *Korolkowii*	9		„ „ „ „
„ *Maackii*	9		„ „ „ „
„ *prostrata*	9		„ „ „ „
„ *quinquelocularis*	9		„ „ „ „
„ *tatarica*	9		„ „ „ „
Section Nintooa.			
Lonicera alseuosmoides	18		„ „ „ „
„ *Henryi*	27	54	„ „ „ „
„ *japonica*	9		„ „ „ „
Subgenus II. Perichymenum			
Lonicera dioica	9		„ „ „ „
„ *prolifera*	9		„ „ „ „
DIERVILLA [1])			
Section Weigela			
Diervilla florida	18		„ „ „ „
„ *hortensis*	18	36	„ „ „ „
„ *praecox*	18		„ „ „ „
Section Eudiervilla			
Diervilla rivularis	18		„ „ „ „
„ *sessilifolia*	18		„ „ „ „
CUCURBITALES			
CUCURBITACEAE			
Melothria punctata		24	McKAY, 1930.
Sicyos angulata		24	„ „
Momordica charantia		22	„ „
Echallium elaterium		24	„ „
Luffa acutangula		26	„ „
„ *cylindrica* var. *Luffa gourd*	11		PASSMORE, 1930.
„ *Marylandica*		26	McKAY, 1930.
Bryonia dioica	10		LINDSAY, 1930.
Citrullus vulgaris	11		McKAY, 1930.
„ *vulgaris* var. *Kleckley Sweets watermelon*	11	22	PASSMORE, 1930.
„ *vulgaris* var. *Radio*	11	22	WHITAKER, 1930.
„ *vulgaris* var. *Tom Watson*	11	22	„ „
Cucumis anguria L. (?)		24	KOZHUKHOW, 1930.

[1]) Classification is according to REHDER (1927).

CUCURBITACEAE (continued)	n	2n	
Cucumis (continued)			
Cucumis anguria var. *West India Gherkin*	11	22	WHITAKER, 1930.
„ *dipsaceus* EHRENB.		24	KOZHUKHOW, 1930.
„ *dipsaceus*		24	McKAY, 1930.
„ *erinaceus* (?)		24	KOZHUKHOW, 1930.
„ *flexuosus* (?)		24	„ „
„ *grossularia*		24	„ „
„ *lyratus* ZIM.		24	„ „
„ *melo*	12		McKAY, 1930.
„ *melo* var. *chinensis* PANG.		24	KOZHUKHOW, 1930.
„ *melo* var. *flexuosus* NAUD. [1]		24	„ „
„ *melo* var. *Lake Champlain*	12	24	WHITAKER, 1930.
„ *melo* var. *microcarpus* PANG. [1]		24	KOZHUKHOW, 1930.
„ *melo* var. *Rocky Ford cantaloupe*	12		PASSMORE, 1930.
„ *melo* var. *vulgaris agrestis* NAUD. [1]		24	KOZHUKHOW, 1930.
„ *melo* var. *vulgaris cultus* PANG. [1]		24	„ „
„ *metuliferus* E. MEYER		24	„ „
„ *metuliferus*		24	McKAY, 1930.
„ *myriocarpus* NAUD.		24	KOZHUKHOW, 1930.
„ *myriocarpus*		24	McKAY, 1930.
„ *odoratissimus* (?)		24	KOZHUKHOW, 1930.
„ *prophetarum* L.		24	„ „
„ *sativus* L.		14	„ „
„ *sativus* var. *Everbearing*	7		WHITAKER, 1930.
„ *sativus* var. *Henderson*	7		„ „
„ *sativus* var. *Short Green Gherkin*	7	14	„ „
„ *sativus* var. *usambarensis* ZIM.		24	KOZHUKHOW, 1930.
„ *sativus* var. *White Spine Cucumber*		14 [2]	PASSMORE, 1930.
Eryonopsis laciniosa		24	McKAY, 1930.
Benincasa hispida		24	„ „

[1]) Several forms of this variety were examined.

[2]) Root-tip cells showed 14 chromosomes. Certain cells in the perikleni showed 28. The chromosome count could not be ascertained definitely in the pollen mother-cells.

	n	2n	
CUCURBITACEAE (continued)			
Lagenaria vulgaris		24	McKay, 1930.
„ *vulgaris* var. *African Pipe*	11	22	Whitaker, 1930.
Cucurbita ficifolia		42	McKay, 1930.
„ *foetidissima*		42	„ „
„ *maxima* Duchesne (Hubbard Squash)	20	40	Castetter, 1930.
„ *maxima* var. *Mammoth Chili*		40	Whitaker, 1930.
„ *maxima* var. *Warted Hubbard Squash*	20		Passmore, 1930.
„ *moschata* Duchesne (line ♯ 5) var. Large Cheese	24	48	Castetter, 1930.
„ *moschata* var. *Calhoun*		48	Whitaker, 1930.
„ *palmata*		42	McKay, 1930.
„ *pepo* var. *English vegetable marrow*	20		Passmore, 1930.
„ *pepo* var. *Jersey White Bush Squash*	20		„ „
„ *pepo* var. *Winter Luxury*	20	40	Whitaker, 1930.
„ *pepo* L. (Connecticut Field line ♯175)	20	40	Castetter, 1930.
Coccinia hirtella		24	McKay, 1930.
Cyclanthera pedata		32	„ „
CAMPANULATAE			
CAMPANULACEAE			
Campanula persicifolia	8		Gairdner & Darlington, 1930.
„ *persicifolia* (white double variety)	8 [1])		„ „ „ „
„ *persicifolia* (form from Gmunden, Austria)	8 [1])	16	„ „ „ „
„ *persicifolia* (Murols)		16	„ „ „ „
„ *persicifolia* (white double variety × seedling from Murols, Prey de Pome)	8 [2])	„	„ „ „ „

[1]) This type had 6 rings of 2, and one group of 4 chromosomes instead of the 8 bivalents at metaphase.

[2]) Of 4 plants of this cross, 1 had 8 bivalents and 3 had 6 bivalents and the ring of 4 chromosomes.

COMPOSITAE	n	2n	
CREPIS			
Crepis aculeata (D.C.) BOISS.		8	HOLLINGSHEAD & BABCOCK, 1930.
„ *alpina* L.		10	„ „ „ „
„ *alpina* var. *syriaca* BORNM.		10, 11, 12, 13	„ „ „ „
„ *amplexifolia* (GODR.) WILLK.		8	„ „ „ „
„ *aspera* L.		8	„ „ „ „
„ *asturica Lacaita*		10	„ „ „ „
„ *aurea* (L.) CASS.		10	„ „ „ „
„ *aurea*		10	AVERY, 1930.
„ *biennis* L.		39, 41	HOLLINGSHEAD & BABCOCK, 1930.
„ *blattaroides* (L.) VILL.		8	„ „ „ „
„ *bulbosa* (L.) TAUSCH.		18	„ „ „ „
„ *bungei* LEDEB.		8, 16	„ „ „ „
„ *burejensis* F. SCHMIDT		8	„ „ „ „
„ *bureniana* BOISS.		8	„ „ „ „
„ *bursifolia* L.		8	„ „ „ „
„ *capillaris* (L.) WALLR.		6	„ „ „ „
„ *capillaris*		6	AVERY, 1930.
	$3,2+2_1/2$		
	$1+4_1/2$	6	HOLLINGSHEAD, 1930*a*, *b*.
„ *capillaris* (haploid) [1].	3 [2] $/2$	3	HOLLINGSHEAD, 1930*b*.
„ *chondrilloides* JACQ.		8	HOLLINGSHEAD & BABCOCK, 1930.
„ *chrysantha* FROEL.		8	„ „ „ „
„ *ciliata* C. KOCH.		40, 42(?)	„ „ „ „
„ *conyzaefolia* (GOUAN) D.T.		8	„ „ „ „
„ *dioscoridis* L.		6	„ „ „ „
„ *foetida* L.		10	„ „ „ „
„ *gymnopus* KOIDZ.		8	„ „ „ „
„ *hackeli* LANGE		16	„ „ „ „

[1]) Five haploid *Crepis capillaris* plants were found among *C. capillaris* × *C. tectorum* F_1 hybrids and one came from a *C. capillaris* × *C. setosa* cross. Parts of some root-tips in each haploid plant were diploid.

[2]) Meiosis was very irregular, univalents segregating at random or rarely dividing and the daughter halves going to different poles.

COMPOSITAE (continued)	n	2n	
CREPIS (continued)			
Crepis hierosolymitana BOISS. .		12	HOLLINGSHEAD & BABCOCK, 1930.
„ *hookeriana* BALL. . . .		8	„ „ „ „
„ *incana* SIBTH. et SM. .		16	„ „ „ „
„ *incarnata* TAUSCH. . .		8	„ „ „ „
„ *japonica* (L.) BENTH. .		16	„ „ „ „
„ *lacera* TENORE		8	„ „ „ „
„ *leontodontoides* ALL. . .		10	„ „ „ „
„ *leontodontoides*		10	AVERY, 1930.
„ *lybica* PAMP.		8	HOLLINGSHEAD & BABCOCK, 1930.
„ *lyrata* FROEL.		12	„ „ „ „
„ *marschalli* C. A. MEY. .		8	„ „ „ „
„ *marschalli*		8	AVERY, 1930.
„ *mollis* (JACQ.) ASCH. . .		12	HOLLINGSHEAD & BABCOCK, 1930.
„ *montana* URV.		12	„ „ „ „
„ *multicaulis* LEDEB. . .		10	„ „ „ „
„ *myriocephala* COSS. et D. R.		8	„ „ „ „
„ *nana* RICHARDS		14	„ „ „ „
„ *neglecta* L.		8	„ „ „ „
„ *nicaeensis* BALB.		8	„ „ „ „
„ *palaestina* (BOISS.) BORNM.		8	„ „ „ „
„ *paludosa* (L.) MOENCH. .		12	„ „ „ „
„ *pannonica* (JACQ.) C. KOCH.		8	„ „ „ „
„ *parviflora* DESF. . . .		8	„ „ „ „
„ *parviflora*		8	AVERY, 1930.
„ *polytricha* TURCZ. . . .		16(?)	BABCOCK & NAVASHIN, 1930.
„ *pontana* (L.) D. T. . .		10	HOLLINGSHEAD & BABCOCK, 1930.
„ *praemorsa* (L.) TAUSCH.		8	„ „ „ „
„ *pulchra* (L.).		8	„ „ „ „
„ *reuteriana* BOISS. . . .		8	„ „ „ „
„ *rubra* L.		10	„ „ „ „
„ *senecioides* DELILE. . .		8	„ „ „ „
„ *setosa* HALL. f.		8	„ „ „ „
„ *sibirica* L.		10	„ „ „ „
„ *taraxacifolia* THUILL. .		8	„ „ „ „
„ *tectorum* L.		8	„ „ „ „
„ *tectorum*		8	AVERY, 1930.

COMPOSITAE (continued)	n	2n	
CREPIS (American species):			
Crepis tectorum	4	8	HOLLINGSHEAD, 1930*a*.
„ *tectorum* „chimera" (triploid progeny) [1] . . .		8, 9	NAVASHIN, 1930.
„ *tectorum* seedling . . .		7+, 8+ [2]	„ „
„ *tenuifolia* WILLD. . . .		18	HOLLINGSHEAD & BABCOCK, 1930.
„ *tingitana* SALZ.		10	„ „ „ „
„ *tingitana*		10	AVERY, 1930.
„ *vesicaria* L.		8	HOLLINGSHEAD & BABCOCK, 1930.
„ *acuminata* NUTT. . . .		33, 44, 55(?)	„ „ „ „
„ *andersoni* GRAY		22	„ „ „ „
„ *barbigera* LEIB.		44, 88(?)	„ „ „ „
„ *elegans* HOOK.		14	„ „ „ „
„ *glauca* (NUTT.) T. and G.		22	„ „ „ „
„ *gracilis* (EAT.) RYDB. .		22, 55(?)	„ „ „ „
„ *monticola* COVILLE . .		55(?)	„ „ „ „
„ *nana*		14	„ „ „ „
„ *occidentalis* NUTT. . . .		22, 44	„ „ „ „
„ *runcinata* (JAMES) T. and G.		22	„ „ „ „
„ *scopulorum* COV. . . .		44(?)	„ „ „ „
Crepis hybrids:			
Crepis capillaris × *C. leontodontoides*	$\frac{8}{1}$ [3]	8	AVERY, 1930.
„ *capillaris* × *C. tectorum* F_1	$3+1_{\frac{1}{2}}, 2+3_{\frac{1}{2}}, 1+5_{\frac{1}{2}}, 7_{\frac{1}{2}}$	7	HOLLINGSHEAD, 1930*a*.
„ *capillaris* × *C. tectorum* F_1 (triploid hybrids) . .	$3+4_{\frac{1}{2}}$ [4]	10	„ „
„ *capillaris* × *C. tectorum*			

[1]) This plant consisted of three shoots, two of which were triple B trisomic (2n = 9) and the third was normal diploid (2n = 8).

[2]) This plant showed varying numbers of chromosomes in different cells of the root-tip and along with the normal chromosomes were from 1 to 4 atypical chromatin rings or discs.

[3]) Only rarely was there any association of chromosomes as pairs.

[4]) Rarely 2 bivalents and 6 univalents were found and rarely a trivalent, 2 bivalents and 3 univalents.

	n	2n	
COMPOSITAE (continued)			
Crepis hybrids (continued)			
(progeny of triploid hybrids)	7, 8, 9, 10, 11		HOLLINGSHEAD, 1930*a*.
Crepis capillaris × *C. tectorum* (progeny of triploid hybrids) amphidiploid	7, $6+\frac{2_1}{2}$, $5+\frac{4_1}{2}$, $4+\frac{6_1}{2}$	14	„ „
„ *leontodontoides* × *C. aurea*	$5, 4+\frac{2_1}{2}$	10	AVERY, 1930.
„ *leontodontoides* × *C. Marschalli*	$9\,^{1})$	9	„ „
„ *leontodontoides* × *C. parviflora*	$9\,^{2})$	9	„ „
„ *leontodontoides* × *C. tectorum*	$9\,^{2})$	9	„ „
Rodigia commutata SPR. . . .		10	HOLLINGSHEAD & BABCOCK, 1930.
Ixeris gramínea NAKAI		16	„ „ „ „
Pterotheca sancta (L.) K. KOCH.		10	„ „ „ „
Dahlia coccinea	16		LAWRENCE, 1930.
„ *coronata*	16		„ „
„ *variabilis*	32		„ „
Chrysanthemum Decaisneanum		36	SHIMOTOMAI, 1930*c*.
„ *indicum* . . .		18	„ „
„ *Decaisneanum* × *C. indicum*	27	54	„ „
Buphthalmum salicifolium L. .	10		RODOLICO, 1930.

MONOCOTYLEDONEAE

GRAMINEAE			
Section Maydeae			
Zea Mays		10	BEADLE, 1930; BURNHAM, 1930.
„ „ (semi-sterile) . . .	$8+\frac{1_4}{2}$		BURNHAM, 1930.

[1]) Most frequently there was no pairing of chromosomes but the complete range of associations from 9 univalents to 4 bivalents plus one univalent was found.

[2]) All degrees of association from $1 + 7_1$, to $4 + 1_1$ were found.

GRAMINEAE (continued)	n	2n	
Section Maydeae (continued)			
Zea Mays (75 + % sterile) . .	$6+\frac{2_4}{2}$		BURNHAM, 1930.
„ „ (2 plants of intermediate sterility) . . .	$8+\frac{1_6}{2}$		„ „
„ „ (asynaptic plants) .	$\frac{2_0}{2}$		BEADLE, 1930.
„ „ (asynaptic × normal) progenies		20–36	„ „
Section Andropogoneae			
Andropogon halepensis	10		KATTERMANN, 1930
„ *halepensis* BROT. .	20	40	NAKAJIMA, 1930.
„ *sorghum* BROT. var. *cernuus* KOERN.	10	20	„ „
„ *sorghum* BROT. var. *sudanensis* PIPER	10	20	„ „
„ *sorghum* BROT. var. *vulgaris* HACK. .	10	20	„ „
Saccharum — Fijian Native Cane	50–60		BREMER, 1930.
Saccharum — Fiji Karawai . .	50–60		„ „
Section Paniceae			
Setaria italica BEAUV.		18	NAKAJIMA, 1930.
Section Oryzeae			
Oryza sativa (Japonica type)			
var. Nakate-Shinriki . . .	12	24	KATO, S., 1930.
„ Okute-Shinriki	12	24	„ „ „
„ Saipei	12	24	„ „ „
„ scented rice.	12	24	„ „ „
Oryza sativa (Indica type)			
var. Fung-hsueh-nuo. . . .	12	24	„ „ „
„ Hunan-sien	12	24	„ „ „
„ Tan-ko-fo-ira	12	24	„ „ „
Oryza sativa (F_1 hybrids between different types) [1]			
Aikoku × Tsao-sien-tao. . .	12	24	„ „ „
Fung-hsueh-nuo × Nakate Shinriki	12	24	„ „ „
Hinode × Basmati	12	24	„ „ „

[1]) In these hybrids, there were a great many abnormalities in the development of the pollen after tetrad formation but „the number and shape of the chromosomes was almost the same as in the hybrids within the same type".

GRAMINEAE (continued)	n	2n	
Section Oryzeae (continued)			
Hinode × Fung-tsui-yu-keng-tao	12	24	KATO, S., 1930.
Hinode × Hatadavi	12	24	„ „ „
Hinomoto × Huo-pe-keng-tao	12	24	„ „ „
Hinomoto × Pu-chiang-sang-pe-li-ken-tao	12	24	„ „ „
Hunan-sien × Nakate Shin-riki	12	24	„ „ „
Kameyi × Black Seenaddy	12	24	„ „ „
Sei-yu × Fung-hsüeh-nuo	12	24	„ „ „
Oryza sativa (F_1 hybrids within the same types) [1]	12	24	„ „ „
Oryza sativa L. var. Kochivittu (from India)	12		SELIM, 1930.
„ *sativa* L. var. Nabatat 1 (from Egypt) probably introduced from Persia.	12		„ „
„ *sativa* L. var. New Japanese 6 (from Egypt) (earlier from Japan under name Ashigara Shin-riki)	12		„ „
„ *sativa* L. var. Temas (from Java)	12		„ „
„ *sativa* L. (an unnamed race of Regents Park from Egypt)	12		„ „
Section Phalarideae			
Phalaris arundinacea L.		28	NAKAJIMA, 1930.
„ *canariensis*	6 [2]		KATTERMANN, 1930.
Section Agrosteae			
Subtribe Pleinae			
Alopecurus fulvus	7		„ „
„ *geniculatus*	14		„ „
„ *myosuroides*	7		„ „
„ *pratensis*	14		„ „
Phleum alpinum (Sweden)		14	GREGOR & SANSOME, 1930.
„ *alpinum* (Scotland)		28	„ „ „ „

[1] In these hybrids, conditions of chromosome number shape and behavior were essentially the same as in the varieties.

[2] One pair of chromosomes always remained attached end-to-end on the equatorial-plate.

GRAMINEAE (continued)	n	2n	
Section Agrosteae (continued)			
Phleum Michelii	7 [1]		Nattermann, 1930.
„ *pratense*	21		„ „
„ *pratense* (Group 1)		42	Gregor & Sansome, 1930.
„ *pratense* (Group 2)		14	„ „ „ „
„ *pratense* (2n = 14) × *Phleum alpinum* (2n = 28) F_1		21	„ „ „ „
„ *pratense* (2n = 14) × *Phleum alpinum* (2n = 28) F_2		42	„ „ „ „
„ *alpinum* (2n = 28) × [*Phleum pratense* (2n = 14) *Phleum alpinum* (2n = 28) F_1].		26, 27, 30	„ „ „ „
„ *pratense* (2n = 42) × *Phleum alpinum* (2n = 28)		35	„ „ „ „
Section Aveneae			
Avena abyssinica Hochst.		28	Nikolaewa, given by Ivanov, 1930.
„ *abyssinica* Hochst. var. *glaberrima* Chiovende	14	28	Emme, 1930*b*.
„ *barbata* Pott. var. *typica* Malz.	14	28	„ „
„ *Brauni* Körn.		28	Nikolaewa, given by Ivanov, 1930.
„ *brevis* Roth.		14	Emme, 1930*b*.
„ *Bruhnsiana* Gruner		14	„ 1930*a*, *b*.
„ *clauda* Dur.		14	„ 1930*a*.
„ *fatua* L.	21	42	„ 1930*b*.
„ *fatua* L. ssp. *fatua* L. Thell.		42	Emme, 1930*a*.
„ *fatua* L. ssp. *sativa* L. Thell.		42	„ „
„ *fatua* L. ssp. *sativa* prol. *chinensis* (Fisch.)		42	„ „
„ *flavescens* L.	14	28	Nakajima, 1930.
„ *Hildebrandti* Körn.		28	Nikolaewa, given by Ivanov, 1930.
„ *hirtula* Lag.		14	Emme, 1930*b*.
„ *Ludoviciana* Dur.	21	42	„ „

[1]) The 7 chromosome pairs were found as 7 rings or as 5 rings + 2 chromosomes attached end-to-end.

GRAMINEAE (continued)	n	2n	
Section Avenaceae (continued)			
Avena nudibrevis VAV.		14	EMME, 1930*b*.
„ *sativa* L.	21	42	„ „
„ *Schimperi* KÖRN. . . .		28	NIKOLAEWA, given by IVANOV, 1930.
„ *sterilis* L.	21	42	EMME, 1930*b*.
„ *sterilis* L. ssp. *byzantina* (C. KOCH).		42	EMME, 1930*b*.
„ *sterilis* L. ssp. *Ludoviciana* (DUR.) GILLET et MAGNE		42	„ „
„ *sterilis* L. ssp. *macrocarpa* (MÖNCH.) BRIQ. .		42	„ 1930*a*.
„ *strigosa* SCHREB. ssp. *abyssinica* (HOCHST.) THELL.		28	„ „
„ *strigosa* SCHREB. ssp. *barbata* (POTT.) THELL.		28	„ „
„ *strigosa* SCHREB. ssp. *barbata* subvar. *atheranta*.		28	„ „
„ *strigosa* SCHREB. ssp. *barbata* subvar. *genuina*		28	„ „
„ *strigosa* SCHREB. ssp. *barbata* subvar. *triflora*		28	„ „
„ *strigosa* SCHREB. ssp. *hirtula* (LAG.)		14	„ „
„ *strigosa* SCHREB. ssp. *strigosa* (SCHREB.) THELL.		14	„ „
„ *strigosa* SCHREB. ssp. *strigosa* prol. *brevis* (ROTH.) THELL. . . .		14	„ „
„ *strigosa* SCHREB. ssp. *strigosa* prol. *nuda* (L.) HAUSSKN. = *nudibrevis* VAV.		14	„ „
„ *strigosa* SCHREB. ssp. *Vaviloviana* MALZ. . .		28	„ „
„ *strigosa* SCHREB. ssp. *Vaviloviana* MALZ. var. *intercedens* THELL. (= *A. Wiestii* THELLUNG)		28	„ „
„ *strigosa* SCHREB. ssp. *Vaviloviana* MALZ. var.			

	n	2n	
GRAMINEAE (continued)			
Section Aveneae (continued)			
pilosiuscula THELL. (= *A. Wiestii* THELLUNG)		28	EMME, 1930*b*.
Avena strigosa SCHREB. ssp. *Vaviloviana* MALZ. var. *pseudoabyssinica* (= *A. Wiestii* THELLUNG) . .		28	„ „
„ *strigosa* SCHREB. ssp. *Wiestii* prol. *Vaviloviana* MALZ. var. *pseudoabyssinica* THELL. .	14	28	„ „
„ *strigosa* SCHREB. ssp. *Wiestii* prol. *Vaviloviana* MALZ. var. *intercedens* THELL.	14	28	„ „
„ *ventricosa* BALANSA. .		14	„ 1930*a*.
„ *Wiestii* STEUD. (according to VAVILOV) . . .		14	„ „
„ *Wiestii* (STEUDEL) THELL. var. *intercedens* THELL.		28	THELLUNG, given by EMME, 1930*b*.
„ *Wiestii* (STEUDEL) THELL. var. *pseudoabyssinica* THELL. . .		28	THELLUNG, given by EMME, 1930*b*.
PAPPOPHOREAE			
Sesleria coerulea var. *uliginosa* .	14		KATTERMANN, 1930.
Section FESTUCEAE			
Subtribe Melicinae			
Melica altissima	9		KATTERMANN, 1930.
„ *nutans*	9		„ „
Subtribe Poinae			
Dactylis Aschersoniana	7		„ „
„ *Aschersoniana* GRAEBN. [1]		14	LEVAN, 1930.
„ *glomerata* L. [2]		28	„ „
„ *glomerata*	14 [3]		KATTERMANN, 1930.
„ *Aschersoniana* GRAEBN. × *D. glomerata* L. [4] .		21	LEVAN, 1930.

[1] Seven forms were investigated. Svalöf nos. 943; 973; 1104; 027 Plant 1; 028. Plant 4; 030 Plant 16; and one from Dr. TURESSON at Akarp.

[2] Five forms were investigated; TURESSON Akarp nos. 104 and 105; Weibullsholm nos. 5051 and 5057; and one wild growing form.

[3] In one plant 15 chromosomes were found at each pole of the cells during anaphase.

[4] The hybrid was Svalöf no. 028 Plant 30.

	n	2n	
GRAMINEAE (continued)			
FESTUCEAE (continued)			
Subtribe Poinae (continued)			
Poa annua	14		KATTERMANN, 1930.
„ *caesia*	$20+5_{\text{I}}$ [1]		„ „
	2		
Subtribe Festucinae			
Festuca arenaria L.	21	42	NAKAJIMA, 1930.
„ *duriuscula* L.		42	„ „
„ *ovina* var. *curvula* WAHLENBERG (from VICKLEBY)	7	14	TURESSON, 1930.
„ *ovina* var. *vulgaris* (from OTTENBY)	7		„ „
„ *ovina* (high alpine form from FINSE)	7		„ „
„ *ovina aapm. rogalandica*		21	„ „
„ *ovina aapm. svolvaeriensis*		28	„ „
„ *ovina aapm. lenvorsiensis*		42	„ „
„ *pratensis*	7		KATTERMANN, 1930.
„ *pratensis* GRAY	7	14	NAKAJIMA, 1930.
„ *tenuifolia* HORT.	7	14	„ „
Briza media	7		KATTERMANN, 1930.
Subtribe Bromeae			
Bromus erectus var. *euerectus*	28		KATTERMANN, 1930.
Section Hordeae			
Agropyron caninum (L.) R. & S. [2]		28	PETO, 1930.
„ *cristatum* J. GAERTN. [3]	14	28	„ „
		14	„ „
		29	„ „
„ *dasyae* GROSSH. [4]		14	„ „
„ *desertorum* [4]		28	„ „

[1]) This plant was thought to be a hybrid because of the lagging chromosomes on the spindle.

[2]) This species was introduced from Denmark.

[3]) Introductions from Caucase, Georgie, Univ. of California, Montana Agr. Exp. Sta. and those of Univ. of Alberta showed root-tips with 28 chromosomes.

Introductions from Omsk Exp. Sta., Siberia had 14 chromosomes.

Of introductions from Krasnyi Kut Exp. Sta., U. S. S. R. three strains had 14 and one had 28 chromosomes.

One strain from Dom. Range Exp. Sta. at Manyberries had 29 chromosomes.

[4]) This species was introduced from Russia.

GRAMINEAE (continued)	n	2n	
Section Hordeeae (continued)			
Agropyron (continued)			
Agropyron dasystachyum (HOOK.) SCRIBN. [1]	14	28	PETO, 1930.
„ *elongatum* [2]		70	„ „
„ *glaucum* R. & S. [3]		42	„ „
„ *griffithsii* SCRIBN. & SMITH [1]	14	28	„ „
„ *junceum* (L.) BEAUV. [3]		28	„ „
„ *obtusiusculum* LANGE [3]		42	„ „
„ *pugens* (PERS.) R. & S. [4]	21		„ „
„ *repens* (L.) BEAUV. [5]	21	42	„ „
		35, 34–35	„ „
		42	„ „
„ *repens* (L.) var. *glaucescens* ENGL. [2]		42	„ „
„ *richardsonii* SCHRAD. [1]	14	28	„ „
„ *sibiricum* (W.) EICHW. [2]		28	„ „
„ *sibiricum* var. *desertorum* [3]		28	„ „
„ *smithii* RYDB. [6]		56	„ „
„ *smithii molle* (S. & S.) JONES [7]		28	„ „
		56	„ „
„ *spicatum* (PURSH) SCRIBN. & SMITH [8]	7	14	„ „

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[1]) This species was introduced from western Canada.

[2]) This species was introduced from Russia.

[3]) This species was introduced from Denmark.

[4]) This species was collected in England.

[5]) Nine forms from Western Canada had 42 somatic chromosomes and 21 bivalents. Of five plants obtained from Russia, three gave counts of 42 somatic chromosomes, one counts of 35 and another either 34 or 35 chromosomes. A strain from Copenhagen had 42 somatic chromosomes.

[6]) Ten strains from Western Canada showed 56 somatic chromosomes.

[7]) Of four plants from Western Canada studied, two had 28 and two had 56 somatic chromosomes.

[8]) Of five plants from Western Canada that were examined two had 14 somatic chromosomes whereas in the three other plants a high percentage of cells showed 1—3 extra chromosomes.

	n	2n	
GRAMINEAE (continued)			
Section Hordeeae (continued)			
Agropyron (continued)			
Agropyron lenerum VASEY [1]	14	28	„ „
„ *lenerum* VASEY (one plant)	$2\text{–}4+13_{\text{I}}\text{–}17_{\text{I}}/2$	21	PETO, 1930.
„ *villosum* LINK. [2]	7		„ „
„ *richardsonii* × *A. lenerum*	14		„ „
Subtribe Hordeinae			
Brachypodium pinnatum		14 [3]	KATTERMANN, 1930.
Subtribe Loliinae			
Lolium perenne [4]	7		KATTERMANN, 1930; NAKAJIMA, 1930.
Secale cereale	7		SAX, K., 1930*c*; BLEIER, 1930*a*.
„ *cereale* var. *Abruzzes*	7		LONGLEY & SANDO, 1930.
„ *cereale* L. var. *afghanicum*		14 & 16	LEVITSKY, 1930.
„ *cereale* (ROSEN)	$5\text{–}7$ [5] $+4_{\text{I}}\text{–}0/2$	14	AASE, 1930.
„ *cereale* var. *Abruzzes* × *S. montanum*	$7, 6+2_{\text{I}}/2$		LONGLEY & SANDO, 1930.
AEGILOPS [6]			
Section Polyeides (ZHUK.) SENJAN.			
Aegilops biuncialis VIS.	14		SENJANINOVA-KORCZAGINA, 1930.
„ *columnaris* ZHUK.	14		„ „ „
„ *ovata* L.	14		„ „ „; PERCIVAL, 1930.
„ *ovata*	14		LONGLEY & SANDO, 1930.
	14	28	AASE, 1930.
„ *triaristata*	14		LONGLEY & SANDO, 1930.
	21		BLEIER, 1930*a*.

[1] Of thirty seven plants from Western Canada, representing a wide range of variable forms, all but one showed 28 somatic chromosomes and in seven of them the 14 bivalents were seen at heterotypic metaphase. In one plant 21 somatic chromosomes and in meiotic figures 13 to 17 univalent chromosomes were found.

[2] This species was introduced from Denmark.

[3] The chromosomes were associated as 14 bivalents or 12 bivalents + 1 quadrivalent or 12 bivalents + 1 trivalent + 1 univalent but at the poles of the spindle 14 chromosomes were always counted.

[4] The plant material studied showed such „monstrosities" as unusual branching. KATTERMANN (1930).

[5] There was some trace of trivalents.

[6] Classification of species used by SENJANINOVA-KORCZAGINA was determined by ZHUKOVSKY.

	n	2n	
GRAMINEAE (continued)			
AEGILOPS (continued)			
Aegilops triaristata ssp. *contorta* ZHUK.	21		SENJANINOVA-KORCZAGINA, 1930.
„ *triaristata* ssp. *recta* ZHUK.	14		„ „ „
„ *triuncialis*	14		LONGLEY & SANDO, 1930.
„ *triuncialis* L.		14	PERCIVAL, 1930.
			SENJANINOVA-KORCZAGINA, 1930.
„ *triuncialis* ssp. KOTSCHYI BOISS.	14		„ „ „
„ *turcomanica* ROSHEV.	21		„ „ „
„ *umbellulata* ZHUK.	14		„ „ „
„ *variabilis* EIG.	14		„ „ „
Section Cylindropyrum (JAUB. et SP.) SENJAN.			
Aegilops caudata L.	7		„ „ „
„ *comosa* SIBTH. et SM.	7		„ „ „
„ *cylindrica*	14		LONGLEY & SANDO, 1930; BLEIER, 1930*a*.
	14	28	AASE, 1930.
„ *cylindrica* HOST.	14		PERCIVAL, 1930.
			SENJANINOVA-KORCZAGINA, 1930.
„ *Heldreichii* HOLZM.	7		„ „ „
„ *persica* BOISS.	14		„ „ „
Section Amblyopyrum (JAUB. et SP.) ZHUK.			
Aegilops mutica BOISS.	7		SENJANINOVA-KORCZAGINA, 1930.
Section Sitopsis (JAUB. et SP.) ZHUK.			
Aegilops Aucheri ssp. *virgata* ZHUK	7		„ „ „
„ *bicornis* JAUB. et SP.	7		„ „ „
„ *longissima* (SCHW. et MUSCH.) EIG.	7		„ „ „
„ *speltoides*	7		LONGLEY & SANDO, 1930*a*.
„ *speltoides* TAUSCH.	7		SENJANINOVA-KORCZAGINA, 1930.
Section Vertebrata (ZHUK.) SENJAN.			
Aegilops crassa	21		LONGLEY & SANDO, 1930.

	n	2n	
GRAMINEAE (continued)			
Aegilops (continued)			
Aegilops crassa BOISS.	21		SENJANINOVA-KORCZAGINA, 1930.
„ *squarrosa*	7		LONGLEY & SANDO, 1930.
„ *squarrosa* L.	7		SENJANINOVA-KORCZAGINA, 1930.
Section Gastropyrum (JAUB. et SP.) ZHUK. SEJAN.			
Aegilops ventricosa	14		LONGLEY & SANDO, 1930. BLEIER, 1930*c*.
„ *ventricosa* TAUSCH. .	14		PERCIVAL, 1930. SENJANINOVA-KORCZAGINA, 1930.
Aegilops hybrids:			
Aegilops cylindrica × *A. ovata*	2_3[1])$+3-8+\frac{10_1-3_1}{2}$	28	AASE, 1930.
„ *cylindrica* HOST. × *A. ovata* L.	$7-13+\frac{14_1-2_1}{2}$		PERCIVAL, 1930.
„ *cylindrica* HOST. × *A. ventricosa* TAUSCH. .	$6-7+\frac{16_1-14_1}{2}$		„ „
„ *ovata* L. × *A. cylindrica* HOST.	$7-13+\frac{14_1-2_1}{2}$		„ „
„ *ovata* × *A. triuncialis*	$0-7+\frac{28_1-14_1}{2}$		LONGLEY & SANDO, 1930.
„ *ovata* × *A. ventricosa* TAUSCH.	$3-7+\frac{22_1-14_1}{2}$		PERCIVAL, 1930.
„ *triuncialis* L. × *A. cylindrica* HOST. . .	$3-12+\frac{22_1-4_1}{2}$		„ „
„ *crassa* × *Triticum compactum*	$0-7+\frac{42_1-28_1}{2}$		LONGLEY & SANDO, 1930.
„ *crassa* × *Triticum dicoccoides*	$0-5+\frac{35_1-25_1}{2}$		„ „ „ „
„ *crassa* × *Triticum dicoccum*	$0-6+\frac{35_1-23_1}{2}$		„ „ „ „

[1]) There was some evidence of tetravalents also.

GRAMINEAE (continued)	n	2n	
Aegilops (continued)			
Aegilops crassa Boiss.	21		Senjaninova-Korczagina, 1930.
„ *squarrosa*	7		Longley & Sando, 1930.
„ *squarrosa* L.	7		Senjaninova-Korczagina, 1930.
Section Gastropyrum (Jaub. et Sp.) Zhuk. Sejan.			
Aegilops ventricosa	14		Longley & Sando, 1930. Bleier, 1930*c*.
„ *ventricosa* Tausch. .	14		Percival, 1930. Senjaninova-Korczagina, 1930.
Aegilops hybrids:			
Aegilops cylindrica × *A. ovata*	2_3[1])+3–8 $+\frac{10_1-3_1}{2}$	28	Aase, 1930.
„ *cylindrica* Host. × *A. ovata* L..	$7–13+\frac{14_1-2_1}{2}$		Percival, 1930.
„ *cylindrica* Host. × *A. ventricosa* Tausch. .	$6–7+\frac{16_1-14_1}{2}$		„ „
„ *ovata* L. × *A. cylindrica* Host.	$7–13+\frac{14_1-2_1}{2}$		„ „
„ *ovata* × *A. triuncialis*	$0–7+\frac{28_1-14_1}{2}$		Longley & Sando, 1930.
„ *ovata* × *A. ventricosa* Tausch.	$3–7+\frac{22_1-14_1}{2}$		Percival, 1930.
„ *triuncialis* L. × *A. cylindrica* Host. . .	$3–12+\frac{22_1-4_1}{2}$		„ „
„ *crassa* × *Triticum compactum*	$0–7+\frac{42_1-28_1}{2}$		Longley & Sando, 1930.
„ *crassa* × *Triticum dicoccoides*	$0–5+\frac{35_1-25_1}{2}$		„ „ „ „
„ *crassa* × *Triticum dicoccum*	$0–6+\frac{35_1-23_1}{2}$		„ „ „ „

[1]) There was some evidence of tetravalents also.

GRAMINEAE (continued)	n	2n	
Aegilops hybrids (continued)			
Aegilops crassa × *Triticum durum*		$0-3+\frac{35_I-29_I}{2}$	LONGLEY & SANDO, 1930.
„ *crassa* × *Triticum polonicum*		$0-4+\frac{35_I-27_I}{2}$	„ „ „ „
„ *crassa* × *Triticum spelta*		$0-6+\frac{42_I-30_I}{2}$	„ „ „ „
„ *crassa* × *Triticum turgidum*		$0-4+\frac{35_I-27_I}{2}$	„ „ „ „
„ *crassa* × *Triticum vulgare*		$0-7+\frac{42_I-28_I}{2}$	„ „ „ „
„ *cylindrica* HOST. × *Triticum compactum* HOST. var. *rubriceps*.		$7+\frac{21_I}{2}$	PERCIVAL, 1930.
„ *cylindrica* HOST. × *Triticum dicoccoides* KÖRN. var. *rubrivillosum*		$1-4+\frac{26_I-20_I}{2}$, $\frac{28_I}{2}$	„
„ *cylindrica* HOST. × *Triticum dicoccum* SCHÜB. var. *farrum*		$1-4+\frac{26_I-20_I}{2}$, $\frac{28_I}{2}$	„ „
„ *cylindrica* × *Triticum durum*		$\frac{28_I}{2}$	BLEIER, 1930*a*, *c*.
„ *cylindrica* × *Triticum durum* (KUBANKA)		$0-5^1)+\frac{28_I-18_I}{2}$	28 AASE, 1930.
„ *cylindrica* HOST. × *Triticum polonicum* L.		$1-4+\frac{26_I-20_I}{2}$, $\frac{28_I}{2}$	PERCIVAL, 1930.

[1]) There was some trace of trivalents.

GRAMINEAE (continued)	n	2n	
Aegilops hybrids (continued)			
Aegilops cylindrica × *Triticum polonicum*	$0\text{–}3+\frac{28_I-22_I}{2}$		LONGLEY & SANDO, 1930.
„ *cylindrica* HOST. × *Triticum Spelta* L. var. *Duhamdianum*	$\frac{7+21_I}{2}$		PERCIVAL, 1930.
„ *cylindrica* × *Triticum Spelta*	$\frac{7+21_I}{2}$		BLEIER, 1930*a*.
„ *cylindrica* × *Triticum turgidum*	$0\text{–}3+\frac{28_I-22_I}{2}$		LONGLEY & SANDO, 1930.
„ *cylindrica* × *Triticum turgidum* (Alaska)	$0\text{–}4^1)+\frac{28_I-20_I}{2}$	28	AASE, 1930.
„ *cylindrica* HOST. × *Triticum turgidum* L. var. *ioturum* (Petianelli voire de Nice)	$1\text{–}4+\frac{26_I-20_I}{2}$, $\frac{28_I}{2}$		PERCIVAL, 1930.
„ *cylindrica* HOST. × *Triticum vulgare* HOST. var. *erythrospermum*	$\frac{7+21_I}{2}$	„	„
„ *cylindrica* HOST. × *Triticum vulgare* HOST. var. *milliturum*	$\frac{7+21_I}{2}$	„	„
„ *cylindrica* × *Triticum vulgare*	$\frac{7+21_I}{2}$		BLEIER, 1930*a*.
„ *cylindrica* × *Triticum vulgare* (HUSSAR)	$6\text{–}9^1)+\frac{23_I-17_I}{2}$	35	AASE, 1930.
„ *ovata* × *Triticum compactum* (hybrid 128)	$0\text{–}3^1)+\frac{35_I-29_I}{2}$	35	„ „

[1]) There was some trace of trivalents.

	n	2n	
GRAMINEAE (continued)			
Aegilops hybrids (continued)			
Aegilops ovata L. × *Triticum compactum* HOST. var. *creticum* . . .	$\frac{35_I}{2}$, $2-3+\frac{31_I-29_I}{2}$		PERCIVAL, 1930.
„ *ovata* L. × *Triticum dicoccoides* KÖRN. var. *Kotschyanum* .	$\frac{28_I}{2}$, $1-3+\frac{26_I-22_I}{2}$	28	„ „
„ *ovata* L. × *Triticum dicoccoides* KÖRN. var. *spontaneonigrum*	$\frac{28_I}{2}$, $1-3+\frac{26_I-22_I}{2}$	28	„ „
„ *ovata* L. × *Triticum dicoccum* SCHÜB. var. *Ajar*	$\frac{28_I}{2}$, $1+\frac{26_I}{2}$	28	„ „
„ *ovata* L. × *Triticum dicoccum* SCHÜB. var. *ethiopicum*	$\frac{28_I}{2}$, $1+\frac{26_I}{2}$	28	„ „
„ *ovata* L. × *Triticum dicoccum* SCHÜB. var. *persicum* PERCIV. (= *T. persicum* VAV.). .	$0-1+\frac{28_I-26_I}{2}$		„ „
„ *ovata* × *Triticum durum*	$\frac{28_I}{2}$		BLEIER, 1930*a*, *c*.
„ *ovata* × *Triticum durum* (KUBANKA) . .	$0-3+\frac{28_I-22_I}{2}$	28	AASE, 1930.
„ *ovata* L. × *Triticum durum* DESF. var. *affine*	$\frac{28_I}{2}$, $1-2+\frac{26_I-24_I}{2}$		PERCIVAL, 1930.

	n	2n	
GRAMINEAE (continued)			
Aegilops hybrids (continued)			
Aegilops ovata × *Triticum monococcum*	$0\text{-}7+\frac{21_1-7_1}{2}$		BLEIER, 1930*a*, *c*.
	$0\text{-}6^1)+\frac{21_1-9_1}{2}$	21	AASE, 1930.
„ *ovata* L. × *Triticum monococcum* L.	$\frac{21_1{}^2)}{2}$,		
	$1\text{-}5+\frac{19_1-11_1}{2}$		PERCIVAL, 1930.
„ *ovata* L. × *Triticum polonicum* L.	$\frac{28_1}{2}$,		
	$1\text{-}(2)+\frac{26_1-(24_1)}{2}$		„ „
„ *ovata* L. × *Triticum sphaerococcum* PERCIV. var. *tumidum*	$\frac{35_1}{2}$,		
	$4+\frac{27_1}{2}$		„ „
„ *ovata* L. × *Triticum Spelta* L. var. *coeruleum*	$\frac{35_1}{2}$,		
	$1\text{-}3+\frac{33_1-29_1}{2}$		„ „
„ *ovata* × *Triticum Spelta* (ALSTROUM)	$0\text{-}3+\frac{35_1-23_1}{2}$		AASE, 1930.
„ *ovata* L. × *Triticum turgidum* L. var. *mirabile*	$\frac{28_1}{2}$,		
	$1\text{-}2+\frac{26_1-24_1}{2}$		PERCIVAL, 1930.
„ *ovata* × *Triticum villosum*	$\frac{21_1}{2}$		BLEIER, 1930*c*.

[1]) There was some trace of trivalents.

[2]) In one loculus of an anther several cells were found to contain 35 univalent chromosomes.

	n	2n	
GRAMINEAE (continued)			
Aegilops hybrids (continued)			
Aegilops ovata L. × *Triticum vulgare* HOST. var. *album*	$\frac{35_I}{2}$		
	$\frac{2\text{-}3+31_I-29_I}{2}$		PERCIVAL, 1930.
„ *triaristata* × *Triticum vulgare*	$\frac{0\text{-}7+42_I-28_I}{2}$		BLEIER, 1930*a*.
„ *triuncialis* L. × *Triticum dicoccoides* KÖRN. var. *Kotschyanum*	$\frac{1\text{-}3+26_I-22_I}{2}$		PERCIVAL, 1930.
„ *triuncialis* L. × *Triticum dicoccoides* KÖRN. var. *rubrivillosum*	$\frac{1\text{-}3+26_I-22_I}{2}$		„ „
„ *triuncialis* L. × *Triticum durum* DESF. var. *affine*	$\frac{1\text{-}6+26_I-16_I}{2}$		„ „
„ *triuncialis* L. × *Triticum Spelta* L. var. *album*	$\frac{0\text{-}3+35_I-29_I}{2}$		„ „
„ *triuncialis* L. × *Triticum turgidum* var. *lusitanicum*	$\frac{1\text{-}3+26_I-22_I}{2}$		„ „
„ *triuncialis* L. × *Triticum vulgare* HOST. var. *militurum*	$\frac{1\text{-}5+33_I-25_I}{2}$		„ „
„ *triuncialis* × *Triticum vulgare* (HUSSAR)	$\frac{0\text{-}3+35_I-28_I}{2}$	35	AASE, 1930.
„ *ventricosa* TAUSCH. × *Triticum dicoccoides* KÖRN. var. *Kotschyanum*	$\frac{0\text{-}2+28_I-26_I}{2}$		PERCIVAL, 1930.
„ *ventricosa* TAUSCH. × *Triticum dicoccum*			

GRAMINEAE (continued)	n	2n	
Aegilops hybrids (continued)			
var. *farrum*	$0\text{-}(2)+\frac{28_I-(26_I)}{2}$		PERCIVAL, 1930.
Aegilops ventricosa TAUSCH. × *Triticum monococcum* L.	$\frac{21_I}{2}$,		
	$1\text{-}4+\frac{19_I-13_I}{2}$		„ „
„ *ventricosa* TAUSCH. × *Triticum polonicum* L.	$0\text{-}2+\frac{28_I-26_I}{2}$		„ „
„ *ventricosa* TAUSCH. × *Triticum turgidum* L. var. *lusitanicum* . .	$0\text{-}2+\frac{28_I-26_I}{2}$		„ „
ventricosa × *Triticum villosum*	$0\text{-}4+\frac{21_I-13_I}{2}$		BLEIER, 1930*c*.
„ *ovata* L. × *Triticum turgidum* L. var. *miserabile* F_1	$\frac{28_I}{2}$,		
	$5\text{-}8+\frac{18_I-12_I}{2}$	28	PERCIVAL, 1930.
„ *ovata* L. × *Triticum turgidum* L. var. *ioduron*	$\frac{28_I}{2}$		„ „
Triticum aegilopoides		14	WAKAKUWA, 1930.
„ *compactum*		42	„ „
„ *compactum* HOST. . .	21		LONGLEY & SANDO, 1930.
„ *compactum* HOST. var. *creticum*	21		PERCIVAL, 1930.
„ *compactum* HOST. var. *rubriceps*	21		„ „
„ *compactum* (hybrid 128)	$0\text{-}1\ ^1)+\frac{21_I}{2}$	21	AASE, 1930.
„ *compactum* „Jenkin's Club"	21 [2]		THOMPSON & ROBERTSON, 1930.

[1]) There was some trace of trivalents.
[2]) A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.

	n	2n	
GRAMINEAE (continued)			
Triticum (continued)			
Triticum dicoccoides	14		BLEIER, 1930*a*.
		28	WAKAKUWA, 1930.
„ *dicoccoides* KCKE. . .	14		LONGLEY & SANDO, 1930.
„ *dicoccoides* KÖRN. var. *Kotschyanum* . . .	14		PERCIVAL, 1930.
„ *dicoccoides* KÖRN. var. *rubriviliosum* . . .	14		„ „
„ *dicoccoides* KÖRN. var. *spontaneonigrum* . .	14		„ „
„ *dicoccoides* „Wild Emmer"	14 [1]		THOMPSON & ROBERTSON, 1930.
„ *dicoccum*		28	WAKAKUWA, 1930.
„ *dicoccum* SCHRK. . .	14		LONGLEY & SANDO, 1930.
„ *dicoccum* SCHÜB. var. *Ajar*	14		PERCIVAL, 1930.
„ *dicoccum* SCHÜB. var. *ethiopicum*	14		„ „
„ *dicoccum* SCHÜB. var. *farrum*	14		„ „
„ *dicoccum* SCHÜB. var. *persicum*	14		„ „
„ *dicoccum* „Khapli" .	14 [1]		THOMPSON & ROBERTSON, 1930.
„ *dicoccum* „Spring Emmer"	14 [1]		„ „ „ „
„ *dicoccum* „Vernal" .	14 [1]		„ „ „ „
dicoccum „White Spring Emmer" . .		28	JENKINS & THOMPSON, 1930.
„ *durum* „Iumillo" . .	14 [1]		THOMPSON & ROBERTSON, 1930.
		28	JENKINS & THOMPSON, 1930.
„ *durum* „Velvet Don"	14	28	STEVENSON, 1930*b*.
„ *durum* DESF. var. *affine*	14		PERCIVAL, 1930.
„ *durum* (30)		28	WAKAKUWA, 1930.
„ *monococcum*	7		BLEIER, 1930*a*.
	7	14	AASE, 1930.
		14	WAKAKUWA, 1930.
„ *monococcum* L. . . .	7		PERCIVAL, 1930; LONGLEY & SANDO, 1930.
„ *persicum* „Black Persian"	14 [1]		THOMPSON & ROBERTSON, 1930.
„ *persicum* VAV. . . .		28	NIKOLAEWA, given by VAKAR, 1930.

[1]) A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.

GRAMINEAE (continued)	n	2n	
Triticum (continued)			
Triticum polonicum L.	14		PERCIVAL, 1930; LONGLEY & SANDO, 1930.
„ *polonicum* „Polish" .	14 [1])		THOMPSON & ROBERTSON, 1930.
		28	WAKAKUWA, 1930.
„ *Spelta*	21		LONGLEY & SANDO, 1930.
		42	WAKAKUWA, 1930.
„ *Spelta* L. var. *album* .	21		PERCIVAL, 1930.
„ *Spelta* L. var. *coeruleum*	21		„ „
„ *Spelta* L. var. *Duhamelianum*	21		„ „
„ *Spelta* „Spring Spelt".	21 [1])		THOMPSON & ROBERTSON, 1930.
„ *sphaerococcum* PERCIV. var. *tumidum* .	21		PERCIVAL, 1930.
„ *turgidum*	14		LONGLEY & SANDO, 1930.
	14	28	BERG, given by TSCHERMAK, 1933.
		28	WAKAKUWA, 1930.
„ *turgidum* („Alaska") .	14	28	AASE, 1930.
„ *turgidum* L. var. *iodurum*	14		PERCIVAL, 1930.
„ *turgidum* L. var. *lusitanicum*	14		„ „
„ *turgidum* L. var. *mirabile*	14		„ „
„ *turgidum* (Unnamed — from Tunis) . .	14 [1])		THOMPSON & ROBERTSON, 1930.
„ *villosum*	7		BLEIER, 1930*c*.
	7	14	BERG, given by TSCHERMAK, 1930.
„ *vulgare*	21		BLEIER, 1930*a*; LONGLEY & SANDO, 1930.
		42	WAKAKUWA, 1930.
„ *vulgare* VILL.		42	VAKAR, 1930.
„ *vulgare* HOST. var. *albidum*	21		PERCIVAL, 1930.
„ *vulgare albidum* (progeny of X-rayed plants)		41, 42	
		40+2frag.	
		41+1 frag.	
		43+2 frag.	DELAUNAY, 1930.

[1]) A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.

	n	2n	
GRAMINEAE (continued)			
Triticum (continued)			
Triticum vulgare Host. var. *erythrospermum* . .	21		Percival, 1930.
„ *vulgare* Host. var. *graecum*	21		„ „
„ *vulgare* Host. var. *militurum*	21		„ „
„ *vulgare* Host. var. Quality	21	42	Stevenson, 1930*b*.
„ *vulgare* „Marquis" .	21 [1])		Thompson & Robertson, 1930.
		42	Jenkins & Robertson, 1930.
„ *vulgare* „Turkey Red"	20–21 + $\frac{2_{\mathrm{I}}-0}{2}$	42	Aase, 1930.
„ *vulgare* „Wilhelmina"	21		Bleier, 1930*b*.
„ *vulgare* normal speltoids	21, 20 + 1_{I}		Håkansson, 1930*a*.
„ *vulgare* B. Heterozygotes (speltoids) . .	20 + 1_{I} [2])		„ „
	$\frac{41_{\mathrm{I}}}{2}$ [3])		Mentzing, 1930*c*.
„ *vulgare* C. Heterozygotes (speltoids) . .	$\frac{43_{\mathrm{I}}}{2}$ [3])		Mentzing, 1930*c*.
	20 + 1_3		Håkansson, 1930*a*.
„ *vulgare Subcompactum* (speltoids) . .	$\frac{43_{\mathrm{I}}}{2}$ [3])		Mentzing, 1930*c*.
	20 + 1_{I} + 1 frag.		Håkansson, 1930*a*.
„ — PH10		28	Wakakuwa, 1930.
„ — 30 × PH10 . . .		28	„ „
Triticum hybrids:			
„ *dicoccoides* × *Secale montanum*	$\frac{21_{\mathrm{I}}}{2}$		Longley & Sando, 1930.
„ *durum* (Kubanka) × *Secale cereale* (Rosen)	0–4 + $\frac{21_{\mathrm{I}}-13_{\mathrm{I}}}{2}$	21	Aase, 1930.
„ *durum* var. *melano-*			

[1]) A small proportion of pollen-mother-cells showed 1 or 2 univalent chromosomes.
[2]) Håkansson, 1930*a* examined cultures from A. Akerman and Nilsson Ehle.
[3]) This was one of Nilsson Ehle's forms.

GRAMINEAE (continued)	n	2n	
Triticum hybrids (continued)			
pus No. 00122 × *Secale cereale*	$\frac{21_I}{2}$	21	PLOTNIKOWA, 1930.
Triticum persicum var. *fuliginosum* × *Secale cereale*	$\frac{21_I}{2}$	21	„ „
„ *spelta* × *Secale montanum*	$0\text{–}3+\frac{28_I\text{–}22_I}{2}$		LONGLEY & SANDO, 1930.
„ *spelta* (ALSTROEM) × *Secale cereale* (ROSEN)	$0\text{–}4^1)+\frac{28_I\text{–}20_I}{2}$		AASE, 1930.
„ *secalotricum Sabatoriense* MEISTER (*Triticum vulgare* × *Secale cereale*) F_1	$25+\frac{6_I}{2}$	56	LEVITSKY & BENETZKAIA, 1930.
„ *vulgare* × *Secale cereale*	$\frac{28_I}{2}$		LONGLEY & SANDO, 1930.
	$0\text{–}4+\frac{28_I\text{–}20_I}{2}$		BLEIER, 1930*a*.
„ *vulgare* (Triplet) × *Secale cereale* (ROSEN)	$0\text{–}3^1)+\frac{28_I\text{–}22_I}{2}$	28	AASE, 1930.
„ *vulgare* × *Secale montanum*	$0\text{–}1+\frac{28_I\text{–}26_I}{2}$		LONGLEY & SANDO, 1930.
„ *aegilopoides* × *T. dicoccum*	$7+\frac{7_I}{2}$,		KIHARA & NISHIYAMA, 1930.
	$1_I+6+\frac{6_I}{2}$,		
	$1_I+(1_2+1_2)+4+6_I$,		
	2_3+4+7_I,		
	3_3+3+6_I		
„ *compactum* × *T. monococcum*	$0\text{–}7+\frac{28_I\text{–}14_I}{2}$		LONGLEY & SANDO, 1930.

[1]) There was some trace of trivalents.

	n	2n	
GRAMINEAE (continued)			
Triticum hybrids (continued)			
Triticum dicoccoides × *T. aegilopoides*	0–5 + $\frac{2 1_I - 1 1_I}{2}$		Belling, 1930a.
„ *dicoccoides* × *T. monococcum*	0–6 + $\frac{2 1_I - 9_I}{2}$		Longley & Sando, 1930.
„ *dicoccoides* (Wild Emmer) × *T. monococcum*	4–7[1]) + $\frac{1 1_I - 7_I}{2}$	21	Aase, 1930.
„ *dicoccum* × *T. dicoccoides*	14 [4])		Thompson & Robertson, 1930.
„ *dicoccum* (Vernal) × *T. dicoccum* (Khapli)	14 [3])		„ „ „ „
„ *dicoccum* × *T. monococcum*	7 + $\frac{7_I}{2}$		Kihara & Nishiyama, 1930.
„ *dicoccum* × *T. persicum* Vav.	14		Vakar, 1930.
„ *dicoccum* × *T. polonicum*	14 [2])		Thompson & Robertson, 1930.
„ *durum* × *T. dicoccoides*	14 [2])		„ „ „ „
„ *durum* (Kubanka) × *T. dicoccoides* (Wild Emmer)	11–14[4]) + $\frac{2 1_I - 0_I}{2}$	28	Aase, 1930.
„ *durum* × *T. dicoccum*	14 [3])		Thompson & Robertson, 1930.
„ *durum* × *T. dicoccum* (Khapli)	14 [3])		„ „ „ „
„ *durum* (Kubanka) × *T. monococcum* (Einkorn)	4–7[1]) + $\frac{13_I - 7_I}{2}$	21	Aase, 1930.
„ *durum* × *T. persicum*	14 [2])		Thompson & Robertson, 1930.
„ *durum* × *T. polonicum*	14 [2])		„ „ „ „
„ *durum* (Kubanka) ×			

[1]) There was some trace of trivalents.
[2]) This hybrid showed only a slightly greater amount of irregularity, in the presence of 1 or 2 univalents than the parental species.
[3]) A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.
[4]) There was some trace of tetravalents.

	2	2n	
GRAMINEAE (continued)			
Triticum hybrids (continued)			
T. polonicum (Polish)	$13\text{–}14+\frac{2_I-0}{2}$	28	AASE, 1930.
Triticum durum (Kubanka) × *T. vulgare* (Marquis)	$12\text{–}14^1)+\frac{11_I-7_I}{2}$	35	„ „
„ *durum* × *T. vulgare*	$14+\frac{7_I}{2}$,		
	$13+\frac{9_I}{2}$,		
	$1_I+13+\frac{6_I}{2}$,		
	$2_{III}+12+\frac{5_I}{2}$.		KIHARA & NISHIYAMA, 1930.
(„ *durum* Line 00122 × *T. vulgare* Line 00274) F_1	$14+\frac{7_I}{2}$		SAPEHIN, L., 1930.
(„ *durum* Line 00122 × *T. vulgare* Line 00274) F_2	$14+\frac{7_I}{2}$		
	to $21+0_I$		„ „ „
„ *durum* Line 00122 × *T. vulgare* Line 00274) F_2 Plant 135	$16+\frac{4_I}{2}$		„ „ „
F_4 Plant 135	$16+\frac{2_I}{2}$,		
	$16+\frac{3_I}{2}$,		
	$16+\frac{4_I}{2}$.		„ „ „
(„ *durum* Line 00122 × *T. vulgare* Line 00274) Plant 183	$14+\frac{7_I}{2}$		„ „ „
(„ *durum* Line 00122 × *T. vulgare* Line 00274) F_2 of Plant			

1) There was some trace of trivalents & tetravalents.

	n	2n	
GRAMINEAE (continued)			
Triticum hybrids (continued)			
183	14, $\frac{14+5_1}{2}$,		
	$\frac{15+4_1}{2}$,		
	$\frac{16+3_1}{2}$,		
	$\frac{16+5_1}{2}$,		
	$\frac{17+4_1}{2}$		SAPEHIN, L., 1930.
Triticum durum (Velvet Don) × *T. vulgare* (Quality) F_1	$\frac{14+7_1}{2}$	35	STEVENSON, 1930*a*, *b*.
„ *durum* (Velvet Don) × *T. vulgare* (Quality) F_2 . . . . . [1]	14; $\frac{14+1_1}{2}$;	28, 29,	
	$\frac{14+2_1}{2}$;	30,	
	$\frac{15+2_1}{2}$;	32,	
	$\frac{14+7_1}{2}$;	35,	
	$\frac{17+4_1}{2}$; 21	38, 42,	„ 1930*b*.
„ *durum* (Velvet Don) × *T. vulgare* (Quality) F_3 [2]) from F_2 (2n = 42)		42	„ „
„ *durum* (Velvet Don) × *T. vulgare* (Quality) F_3 [3]) from F_2 (2n = 38)	$\frac{15+3_1}{2}$;		
	$\frac{15+4_1}{2}$;	33, 34,	
	$\frac{16+4_1}{2}$;		
	$\frac{17+4_1}{2}$;	36, 38,	
	21.	42.	„ „

[1]) Of the 24 F_2 plants 11 had 28; 3, 29; 2, 30; 1, 32; 1, 35; 1, 38; and 5, 42 somatic chromosomes.

[2]) Two F_3 lines of 13 and 11 plants respectively were grown with 42 chromosomes.

[3]) Five F_3 plants were grown.

	n	2n	
GRAMINEAE (continued)			
Triticum hybrids (continued)			
Triticum durum (Velvet Don) × *T. vulgare* (Quality) F_3 [1]) from F_2 (2n unknown) . . .	14;	28,	
	$14+1_I$;	29,	
	$14+\frac{2_I}{2}$;	30,	
	$14+\frac{7_I}{2}$;	35,	
	$18+\frac{3_I}{2}$;	21, 39, 42.	STEVENSON, 1930*b*.
„ *durum* (Velvet Don) × *T. vulgare* (Quality) F_3 [2]) from F_2 (2n = 30)		28	„ .
„ *durum* (Velvet Don) × *T. vulgare* (Quality) F_3 [3]) from F_2 (2n = 29)		28	„ „
„ *durum* (Velvet Don) × *T. vulgare* (Quality) F_3 [4]) from F_2 (2n = 28)		28	„ „
„ *vulgare* (Marquis) × *T. durum* (Iumillo) × Marquillo. . . .	21		„ 1930*a*.
„ *persicum* VAV. × *T. vulgare* VILL. . . .	$14+\frac{7_I}{2}$		VAKAR, 1930.
„ *polonicum* × *T. monococcum*	$0\text{–}5+\frac{21_I-11_I}{2}$		LONGLEY & SANDO, 1930.
„ *Spelta* × *T. compactum*	21 [5])		THOMPSON & ROBERTSON, 1930.
„ *Spelta* × *T. monococcum*	$0\text{–}7+\frac{21_I-7_I}{2}$		LONGLEY & SANDO, 1930.

[1]) Of the 6 plants 3 had 28; 1, 29; 1, 30; 1, 35; 1, 39; and 1, 42 somatic chromosomes.

[2]) Ten F_3 plants were grown with 28 somatic chromosomes.

[3]) Twelve F_3 plants were grown with 28 somatic chromosomes.

[4]) Two F_3 lines of 3 and 6 plants respectively were grown with 28 somatic chromosomes.

[5]) A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.

	n	2n	
GRAMINEAE (continued)			
Triticum hybrids (continued)			
Triticum Spelta × *T. persicum* Vav.	$14+\frac{7_I}{2}$		Varar, 1933.
„ *Spelta* × *T. aegilopoides*	$7+\frac{14_I}{2}$, $10+\frac{8_I}{2}$, $(1_{II}+1_{II})+5+\frac{14_I}{2}$, $1_{III}+5+\frac{15_I}{2}$, $2_{III}+4+\frac{14_I}{2}$, $1_{III}+7+\frac{11_I}{2}$		Kihara & Nishiyama, 1930.
„ *turgidum* × *T. dicoccoides*	14 [1]		Thompson & Robertson, 1930.
„ *turgidum* × *T. dicoccum*	14 [1]		„ „ „ „
„ *turgidum* × *T. monococcum*	$0-7+\frac{21_I-7_I}{2}$		Longley & Sando, 1930.
„ *turgidum* × *T. persicum*	14 [1]		Thompson & Robertson, 1930.
„ *turgidum* × *T. polonicum*	14 [1]		„ „ „ „
„ *turgidum* × *T. villosum* F_1 (*Turgidovillosum*)		21	Berg, given by Tschermak, 1930.
„ *turgidum* × *T. villosum* F_2 (*Turgidovillosum*)	21	42	Berg, given by Tschermak, 1930.
„ *vulgare* × *T. compactum*	21 [2]		Thompson & Robertson, 1930.

[1]) This hybrid showed only a slightly greater amount of irregularity, in the presence of 1 or 2 univalents than the parental species.

[2]) A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.

	n	2n	
GRAMINEAE (continued) . . .			
Triticum hybrids (continued)			
Triticum vulgare × *T. dicoccum* F_2	14,		
	$14+1_1$,		
	$14+2_1$,		
	$14+3_1$,		
	$14+4_1$,		
	$14+7_1$,		
	$17+4_1$		JENKINS & THOMPSON, 1930.
„ *vulgare* × *T. dicoccum* F_3	14,		
	$14+1_1$,		
	$14+2_1$,		
	$14+3_1$,		
	$14+4_1$,		
	$14+6_1$,		
	$16+5_1$,		
	$17+4_1$,		
	$18+3_1$,		
	$19+2_1$.		„ „ „ „
„ *vulgare* × *T. durum* F_2	14,		
	$14+2_1$,		
	$14+4_1$,		
	$16+5_1$,		
	$17+4_1$,		
	$18+3_1$,		
	$19+2_1$,		
	$20+1_1$.		„ „ „ „
„ *vulgare* × *T. durum* F_2	14,		
	$14+1_1$,		
	$14+2_1$,		
	$14+4_1$,		
	$14+6_1$,		
	$14+7_1$,		
	$16+5_1$,		
	$17+4_1$,		
	$18+3_1$,		
	$19+2_1$,		
	$20+1_1$,		
	21.		„ „ „ „
„ *vulgare* × *T. monococcum*	$4-7+\frac{20_1-14_1}{2}$		LONGLEY & SANDO, 1930.

GRAMINEAE (continued)	n	2n	
Triticum hybrids (continued)			
	$0\text{–}5+\frac{28_I-18_I}{2}$		BLEIER, 1930*a*.
Triticum vulgare × *T. spelta* .	21 [1])		THOMPSON & ROBERTSON, 1930.
„ *dicoccoides* × *Aegilops ovata*	$\frac{28_I}{2}$		BLEIER, 1930*a*.
„ *Spelta* (ALSTROUM) × *Aegilops cylindrica* .	$4\text{–}8$ [2])$+\frac{25_I-19_I}{2}$	35	AASE, 1930.
„ *vulgare* HOST. var. *graecum* × *Aegilops ovata* L.	$\frac{35_I}{2}$		
	$2\text{–}3+\frac{31_I-29_I}{2}$		PERCIVAL, 1930.
Hordeum bulbosum LINN. . . .	14		GHIMPU, 1930.
„ *cornutum* hort. VILMORIN	14		„ „
„ *distichum* hort. VILMORIN	14		„ „
„ *distichum nutans* α var. Princess of Svälof	14		„ „
„ *distichum nutans* β var. *Issoudum* . . .	14		„ „
„ *distichum nutans spontaneum* hort.. VILMORIN	14		„ „
„ *erectum* var. Goldthrope	14		„ „
„ *hexastichum*	14		„ „
„ *hexastichum trifurcatum album monstruosum* hort. VILMORIN	14		„ „
„ *maritimum* WITH. . .	14		„ „
„ *murinum* LINN. . . .	14		„ „
„ *nigrum*	14		„ „
„ *nudiramulosum* hort. VILMORIN	14		„ „

[1]) A considerable percentage of the pollen mother cells showed 1 or 2 univalents much higher than found in the parental species.

[2]) There was some trace of trivalents and tetravalents.

	n	2n	
GRAMINEAE (continued)			
Hordeum (continued)			
Hordeum vadum	14		CHIMPU, 1930.
„ *secalinum* SCHREB.	28		„ „
„ *tetrastichum*	14		„ „
„ *thyrsoideum* hort. VILMORIN	14		„ „
„ *vulgare* Branching hort. VILMORIN	14		„ „
„ *vulgare* Escourgeon d'Algérie	14		„ „
„ *zeocritum*	14		„ „
„ *nigrescens* × *trifurcatum* hort. VILMORIN	14		„ „
„ *nigrum* × *trifurcatum* hort. VILMORIN	14		„ „
„ *Steudelii* × *trifurcatum* hort. VILMORIN	14		„ „
SPATHIFLORAE			
ARACEAE			
Arum cornutum	16	32	HAASE-BESSELL, 1930.
FARINOSAE			
COMMELINACEAE			
Cyanotis cristata	12		RAU, 1930.
Rhoeo discolor HANCE	12 [1]		KATO, K., 1930*a*.
	6 [2]		„ „ 1930*b*.
LILIIFLORAE			
LILIACEAE			
MELANTHIOIDEAE [3]			
I. Tofieldieae			
A. *Tofieldia calyculata*		28	MILLER, 1930.
„ *palustris*	15	30	„ „
Narthecium ossifragum	13		„ „
II. Helonieae			
Nerophyllum asphodeloides		30	„ „
Helonias bullata		34	„ „
III. Veratrieae			
Stenanthium robustum		20	„ „

[1]) The chromosomes were arranged in diakinesis in a ring and there was no tendency to form pairs.

[2]) Although the normal number of chromosomes in this plant was 6; 5 and 7 chromosomes were found as the result of unequal distribution towards the poles.

[3]) Classification of the *Melanthioideae* as studied by MILLER is according to ENGLER & PRANTL.

	n	2n	
LILIACEAE (continued)			
Zygadenus chloranthus		32	MILLER, 1930.
„ *elegans*		32	„ „
„ *Fremonti*		22	„ „
Veratrum nigrum		32	„ „
„ *album*		16(?) [1]	„ „
IV. Uvularieae			
Gloriosa superba		22	„ „
Tricyrtus macropoda		26	„ „
„ *pilosa*		26	„ „
„ *stolonifera*		26	„ „
V. Anguillarieae			
Baeometra columelloidea		22	„ „
VI. Colchiceae			
Bulbocodium vernum		22	„ „
Asphodeloideae			
Eremurus speciabilis M. B. var. *Regeli*	7		PROSINA, 1930.
Hemerocallis fulva	6		LAWRENCE, 1930.
Allium odorum	12		MESSERI, 1930.
„ *roseum* v. *bulbilliferum*	24		„ „
Nothoscordum fragrans KUNTH.		16	KOERPERICH, 1930.
Lilium japonicum THUNB.	12		NAGAO, 1930*a*.
„ *regale*	12		SAX, K., 1930*c*.
„ *tigrinum* KER GAWL	12_3, or 11_3 to 6_3 + biv. and univalents	36	TAKENAKA & NAGAMATSU, 1930.
Fritillaria imperialis Nos. 2, 3, 6		24	DARLINGTON, 1930*b*.
„ *imperialis* Nos, 4, 10 [2]		24+3 frag.	„ „
„ *imperialis*, No. 13 [2]		24+6 or 24+12 [3] frag.	„ „
„ *imperialis* var. *Crown upon Crown* [2]		24+3 frag.	„ „
„ *imperialis* var. *maxima Red*		24+1 frag.	„ „

[1]) Preliminary count.
[2]) Pollen mother-cells of this variety were studied in detail.
[3]) The 12 fragments appeared in the flower buds of a plant having 6 fragments in the root-tip.

LILIACEAE (continued)	n	2n	
Fritillaria (continued)			
Fritillaria imperialis var. *maxima Yellow*		24	DARLINGTON, 1930*b*.
„ *imperialis* var. *Orange Brillant*		24 + 1 frag.	„ „
„ *imperialis* var. *Yellow* [1]		24 + 6 frag.	„ „
„ *meleagris*		24	NEWTON & DARLINGTON, 1930.
Tulipa Gesneriana var. *Keizerskroon*		36	DE MOL, 1930.
„ *Gesneriana* var. *Murillo*		23, 24	„ „ „
„ *Gesneriana* var. Pink Beauty		36	„ „ „
Eucomis undulata L'HÉR.		30	KOERPERICH, 1930.
Hyacinthus orientalis var. *La Victor*	8 [2]		STOW, 1930.
„ *orientalis* var. *La Grandesse*		28	DARLINGTON, 1930*c*.
Bellevallia azurea FENZL.		18	LEWITSKY & TRON, 1930.
„ *montana*		8	TRANKOWSKY [3], 1930*b*.
„ *Wilhelmsii* (STEV.) G. WOR.		8	LEWITSKY & TRON, 1930.
Muscari moschatum WILLD.		18	„ „ „ „
„ *polyanthum* BOISS.		18	„ „ „ „
„ *pycnanthum* C. KOCH		16	„ „ „ „
Ruscus aculeatus L.		36	FERNANDES, 1930*c*.
Convallaria majalis L.	ca. 16		TRANKOWSKY, 1930*a*.
Paris hexaphylla CHAM. I & II.	5	10	GOTOH & STOW, 1930.
„ *hexaphylla* CHAM. III	5_3	15	„ „ „ „
„ *tetraphylla* A. GRAY.	5	10	„ „ „ „
Trillium apetalon MAKINO		20	„ „ „ „
„ *Kamtschaticum* PALL.	5	10	„ „ „ „
„ *Tschonoskii* MAXIM.		20	„ „ „ „
„ *T.* var. *rupho-purpureum* TATEWAKI		20	„ „ „ „
„ (Japanese variety)		10	„ „ „ „
„ (Japanese variety)		20	„ „ „ „
Smilax herbacea	13		LINDSAY, 1930.

[1]) Pollen mother-cells of this variety were studied in detail.
[2]) The observation was made in giant pollen grains.
[3]) From preparations by DELAUNAY.

AMARYLLIDACEAE	n	2n	
Galanthus nivalis L.	10		TRANKOWSKY, 1930*a*.
Amaryllis belladonna L. . . .		20	FERNANDES, 1930*c*.
Narcissus bulbocodium L. var. *genuinus*		14	„ 1930*a*.
„ *bulbocodium* L. var. *nivalis*		14	„ „
„ *calciola* MEND. . . .		12	„ 1930*b*.
„ *gaditanus* Bss. et REUT. var. *minutiflorus* WK.		12	„ „
„ *jonquilla* L. var. *jonquilloides* WK. . .		14	„ „
„ *minor* L.		14	„ „
„ *odorus* L.		10	„ „
„ *pseudo-narcissus* L. var. *bicolor* L. . .		23	„ „
„ *pseudonarcissus* var. *Grandée*	7_3+1_1	22	NAGAO, 1930*b*.
„ *reflexus* BROT. . . .		14	FERNANDES, 1930*b*.
„ *rupicola* DUF. . . .		12	„ „
„ *scaberulus* HENRIQ. .		12	„ „
„ *tazetta* L.		10	„ „
„ *tazetta* L. var. A_{22} („*albae*" type). . .	10, 11		NAGAO, 1930*b*.
„ *tazetta* L. var. of *albae* type	10, 11 [1]		„ 1930*a*.
„ *tazetta* L. var. B_{20} (*bicolores* type) . . .	11		NAGAO, 1930*b*.
„ *tazetta* L. var. B_{21} (*bicolores* type) . . .		21	„ „
„ *tazetta* L. var. B_{31} (*bicolores* type) . . .		31	„ „
„ *tazetta* L. var. *Chinese Sacred Lily*	10_3	30	„ „
„ *tazetta* L. var. *Franklin*	10	20	„ „
	10		„ 1930*a*.
„ *tazetta* L. var. *Luna* .		32	„ 1930*b*.
„ *tazetta* L. var. *Soleil d'Or*		30	„ „
„ *tazetta* L. var. *Yellow Prince*		30	„ „

[1]) In the heterotypic metaphase two kinds of pollen mother cells were found, one with 10 and the other with 11 chromosomes.

	n	2n	
AMARYLLIDACEAE (continued)			
Narcissus triandrus L.		14	FERNANDES, 1930*b*.
Pancratium ceylanicum	ca. 45		„ 1930*c*.
„ *maritimum* L.		18 or 20	„ „
„ *speciosum*	40–50		„ „
Agave Sisalana PERRINE	7	14	CATALANO, 1930.
Beschorneria Yuccoides KUNTH.		60	KOERPERICH, 1930.
IRIDACEAE			
IRIS			
Section Juno			
Iris alata POIR.		24	SIMONET, 1930*c*.
„ *bucharica* FOSTER	11		„ 1930*a*.
„ *caucasica* HOFFM.		18	„ 1930*c*.
	9		„ 1930*b*.
„ *orchioides* CAR.		22	„ 1930*a*.
„ *persica*	13		„ 1930*b*.
„ *persica* L. var. *Heldreichi* hort. = *I. stenophylla* HAUSS.		26	„ 1930*c*.
„ *sindjarensis* BOISS. et HAUSS.		22	„ 1930*a*.
	11		„ 1930*b*.
Section Evansia			
Iris milesii BAKER.		26	„ 1930*a*.
„ *tectorum* MAX.		28	„ 1930*c*.
	14		„ 1930*b*.
Section Reticulata			
Iris reticulata BIEB.	10		„ 1930*c*.
Section Xiphion			
Iris Tingitana BOISS.	21		„ 1930*a*.
„ *Tingitana* BOISS. et REUT.	14		„ 1930*b*.
„ *Tingitana* var. *Fontanesii* BOISS.	14	28	„ 1930*a*.
„ *Xiphium* L. var. *Battandieri* FOST.		36	„ 1930*c*.
„ *Xiphium* L. var. *praecox* hort.	17		„ 1930*b*.
Section Regelia			
Iris Korolkowi REGEL var. *concolor* hort.		44	„ 1930*a*.
„ *Korolkowi* REGEL var. *violacea* hort.		22	„ 1930*a*.
	11		„ 1930*b*.
„ *Leichtlini* REGEL		44	„ 1930*a*.
	22		„ 1930*b*.

	n	2n		
IRIDACEAE (continued)				
IRIS (continued)				
Section Pogoniris				
Iris Alberti REGEL	12		SIMONET,	1930*a*.
„ *Alberti* REGEL var. *semperflorens* hort.	12		„	„
„ *albicans* LANGE [1])		44	„	„
„ *Kashmiriana* BAKER [1])		51	„	„
„ *Kochii* A. KERNER [1])		44	„	„
„ *macrantha* hort.	24		„	1930*b*.
„ *mesopotamica* DYKES		48	„	1930*c*.
„ *olbiensis* HEN. var. *alba major* hort.	20		„	1930*b*.
„ *pallida* LAMK. var. *Edina* hort.	12		„	„
„ *plicata* LAMK.	12		„	„
„ *Ricardi* hort.		48	„	1930*a*.
„ *subbiflora* BROT.		40	„	„
„ *subbiflora* BROT. var. *major* hort		40	„	„
„ *variegata* L.	12		„	1930*b*.
Section Apogon				
Iris Bulleyana DYKES		40	„	1930*c*.
„ *chrysographes* DYKES		40	„	„
„ *Forrestii* DYKES		40	„	„
„ *pabularia* NAED. [2])		40	„	„
„ *spuria* L. var. *maritima* LAM.		38	„	1930*a*.
„ *Wilsoni* WRIGHT		40	„	„
Section Onocyclus				
Iris acutiloba C. A. MEY		20	„	1930*c*.
„ *Ewbankiana* FOST.		20	„	„
„ *iberica* HOFFM.		20	„	1930*c*.
	10		„	1930*b*.
„ *iberica* HOFFM. var. *ochracea* REG.		20	„	1930*c*.
„ *Mariae* BARBEY		20	„	1930*c*.
	10		„	1930*b*.
„ *paradoxa* STEV.	10		„	1930*b*.
„ *susiana* L.	40		„	1930*b*.
„ *urmiensis* HOOG.		20	„	1930*c*.
	10		„	1930*b*.

[1]) This is a hybrid and there were a number of monovalents in the pollen mother-cells.

[2]) This is a form of *Iris ensata* THUNB.

IRIDACEAE (continued)	n	2n	
IRIS (continued)			
Iris hybrids:			
Iris andromaque hort. (*I. Korolkowi* REG. var. *violacea* hort. × *I. Mariae* BARB.)		21	SIMONET, 1930b.
„ *Béatrix* hort. (*I. Korolkowi* REG. var. *violacea* hort. × *I. susiana* L.) .		21	„ „
„ *Orestes* hort. (*I. Korolkowi* REG. var. *violacea* hort. × *I. Leichtlini* REG.)		32	„ „
„ *Polymnie* hort. (*I. Korolkowi* REG. var. *violacea* hort. × *I. iberica* HOFFM.)		21	„ „
„ *caucasica* HOFFM. × *I. sindjarensis* BOISS. et HAUSS.		20	„ „
„ *iberica* HOFFM. × *I. pallida* LAMK.		22	„ „
„ *Leichtlini* REG. × *I. macrantha* hort.		46	„ „
„ *Leichtlini* REG. × (*I. paradoxa* STEV. × *I. iberica* HOFFM.).		32	„ „
„ *olbiensis* HEN. × *I. Korolkowi* hort.		31	„ „
„ *olbiensis* HEN. var. *alba major* hort. × *I. Korolkowi* REG.		42	„ „
„ *pallida* LAMK. var. *Edina* hort. × *I. tectorum* MAX.		26	„ „
„ *paradoxa* STEV. × *I. variegata* L.		22	„ „
„ *sindjarensis* BOISS. et HAUSS. × *I. persica* L. .		24	„ „
„ *urmiensis* HOOG. × *I. plicata* LAMK.		22	„ „
„ *Xiphium* L. var. *praecox* hort. × *I. tingitana* BOISS. et REUT.		31	„ „
Bulbous Iris variety „David Bliss"		31	„ „
Bulbous Iris variety Wedgewood		31	„ „

	n	2n	
MICROSPERMAE			
ORCHIDACEAE			
Subfamily I. Diandrae			
Tribe I. Cypripediloideae			
Cypripedilum spectabile	11		HOFFMANN, 1930.
Phragmopedilum caudatum R.		32	„ „
„ *Sedeni* PFITZ.			
(*P. Schlimii* × *longifolium*).	12	24	„ „
„*Cypripedium Blenheimense*" [1])		24	„ „
Paphiopedilum Chamberlainianum PFITZ. .		32	„ „
„ *insigne* PFITZ. .	ca. 16	ca. 32	„ „
„ *Leeanum* (*P. insigne* × *Spicerianum*) . . .	ca. 12	24	„ „
„ *purpuratum* PFITZ. . . .	ca. 24	ca. 48	„ „
Subfamily II. Monandrae			
Division II. Acrotonae			
Tribe III. Polychondreae			
Subtribe Listereae			
Listera ovata R. BR.	17		„ „
Subtribe Vanilleae			
Vanilla planifolia ANDR. . . .		32	„ „
Tribe IV. Kerosphaereae			
Series A. Acranthae			
Subtribe Pleurothallideae			
Stelis atropurpurea LDL. . . .	16		„ „
„ *miersii* LDL.		32	„ „
Physosiphon carinatus LDL. . .	ca. 16		„ „
„ *Loddigesii* LDL. .	ca. 16		„ „
Subtribe Liparideae			
Microstylis L. C. RICH. spec. .	ca. 20		„ „
Subtribe Coelogyneae			
Coelogyne fimbriata LDL. . . .	20		„ „
„ *flexuosa* ROLFE (*Ptychogyne flexuosa* PFITZ.).	20		„ „
„ *fuliginosa* LDL. . .	20		„ „
Dendrochilum glumaceum LDL. (*Platyclinis glumacea* BTH.) .	20		„ „
Pholidota conchoidea LDL. . .	20		„ „

[1]) A hybrid of the genus *Phragmopedilum* or *Paphiopedilum* but still going under the name *Cypripedium*.

ORCHIDACEAE (continued)	n	2n	
Subtribe Laelieae			
Epidendrum Linkianum . . .	ca. 20		HOFFMANN, 1930.
„ *nocturnum* LDL. .	20		„ „
„ *ranuferum* LDL. .	20		„ „
Cattleya Trianae RCHB. . . .	20		„ „
Laeliocattleya Canhamiana (*Laelia purpurata* LDL. × *Cattleya Mossiae* HOOK.) *Laelia tenebrosa* ROLFE *superba* . .	20		„ „
Subtribe Dendrobieae			
Dendrobium chrysotoxum LDL.	20		„ „
„ *infundibulum* LDL.	20		„ „
„ *nobile* LDL. . . .		ca. 20	„ „
„ *thyrsiflorum* RCHB. f.	20		„ „
„ *Wardianum* WARN. var. *giganteum* WILLIAMS & MOORE.		40	„ „
Polystachya polychaete	ca. 20		„ „
Subtribe Lycasteae			
Bifrenaria Harrisoniae RCHB. f.		40	„ „
Lycaste aromatica LDL. . . .	20		„ „
Subtribe Zygopetaleae			
Zygopetalum Mackayi HOOK. .	24(?)		„ „
Subtribe Maxillarieae			
Ornithidium densum RCHB. f. .	24		„ „
Subtribe Oncideae			
Odontoglossum citrosmum LDL.		50–56	„ „
„ *crispum* LDL. .		56	„ „
Oncidium bicallosum LDL. . .	14		„ „
„ *flexuosum*		56	„ „
„ *varicosum* LDL. . .	28		„ „
Series B. Pleuranthae			
Subseries a) Sympodiales			
Subtribe Phajeae			
Calanthe vestita LDL. var. *Regnieri* VEITCH. (*Calanthe Regnieri* RCHB. f.)	20		„ „
Subtribe Bulbophylleae			
Bulbophyllum saurocephalum .	20		„ „
Subtribe Cymbideae			
Cymbidium Lowianum RCHB. f.	20		„ „
Subtribe Gongoreae			
Stanhopea insignis FROST . .	20		„ „
„ *tigrina* BATEM.			

	n	2n		
ORCHIDACEAE (continued)				
Subtribe Gongoreae (continued)				
Gongora galeata Rchb. f. (*Acropera Loddigesii* Ldl.) . . .		20	Hoffmann, 1930.	
Subseries b) Monopodiales				
Subtribe Sarcantheae				
2 Grex *Apodostele*				
Vanda tricolor Ldl.		15	„	„
„ *tricolor* var. *suavis* . .	ca. 18		„	„
Sarcanthus rostratus Ldl. . .		40	„	„

BIBLIOGRAPHY

AASE, H. C., 1930. — Cytology of hybrids. Research Stud. State College Washington 2; 1—60.

ASCHERSON, P. & GRAEBNER, P., 1892 — 1902. Synopsis der mitteleuropäischen Flora 6; 2.

AVERY, P., 1930. — Cytological studies of five interspecific hybrids of *Crepis leontodontoides*. Univ. Calif. Pub. Agr. Sci. 6; 135—167.

BABCOCK, E. B. & NAVASHIN, M., 1930. — The genus *Crepis*. Bibl. Genet. 6; 1—90.

BAMFORD, R. & GERSHOY, A., 1930. — Studies in North American violets. II. The cytology of some sterile F_1 violet hybrids. Vermont Agr. Exp. Sta. Bull. 325; 1—56, Pl. I—XXII.

BEADLE, G. W., 1930. — Genetical and cytological studies of Mendelian asynapsis in *Zea Mays*. Mem. Corn. Univ. Agr. Exp. Stat. 129; 1—23, Pl. I—VI.

BITTER, G., 1912—1913. — Solana nova vel minus cognita. Repertorium specierum novarum regni vegetabilis. F. Fedde XI, XII.

BLACKBURN, K. B. & BOULT, J. J., 1930. — The status of the genus *Saponaria* and its near allies considered in the light of their cytology. Proc. Univ. Durham Philosoph. Soc. 8; 260—266.

BLEIER, H., 1930*a*. — Cytologie von Art- und Gattungsbastarden des Getreides. Züchter 2; 12—22.

BLEIER, H., 1930*b*. — Experimentell cytologische Untersuchungen. I. Einfluss abnormaler Temperatur auf die Reduktionsteilung. Zeitschr. Zellforsch. Mikros. Anat. 11; 218—236.

BLEIER, H., 1930*c*. — Untersuchungen über das Verhalten der verschiedenen Kernkomponenten bei der Reduktionsteilung von Bastarden. La Cellule 40; 84—144, Pl. I—II.

BOWERS, C. G., 1930. — The development of pollen and viscin strands in *Rhododendron catawbiense*. Bull. Torr. Bot. Club 57; 285—314, Pl. XI—XV.

BREMER, G., 1930. — The cytology of *Saccharum*. Proc. Congr. Internat. Soc. Sugar Cane Tech. 3 (1929); 408—415.

BRIEGER, F., 1930. — Über die Bedeutung der Chromosomenverdoppelung für das Problem der Artenstehung. Ber. Deutsch. Bot. Ges. 48; 95—98.

BROFFERIO, I., 1930. — Osservazioni sullo sviluppo delle *Calycanthaceae*. Ann. di Bot. 18; 387—394, Pl. XVIII.

BRUUN, H. G., 1930. — The cytology of the genus *Primula*. Svensk. Bot. Tids. 24; 468—475.

BUNGE, 1869—1874. — Mem. Acad. Imp. Sci. St. Petersbourg 15 ≥1 1869; 22 ≥1, 1874.

BUNTEN, I., 1930. — A prelinminary report on the chromosome complement of rabbit-eared rogues in culinary peas (*Pisum sativum* L.). Amer. Jour. Bot. 17, 139—142.

BURNHAM, C. R., 1930. — Genetical and cytological studies of semisterility and related phenomena in maize. Proc. Nat. Acad. Sci. 16; 269—277.

CAPINPIN, J. M., 1930*a*. — Chromosome behaviour of triploid *Oenothera*. Nature 126; 469—470.

CAPINPIN, J. M., 1930*b*. — Meiotic behaviour of triploid Oenotheras. Amer. Natur. 64; 566—570.

CAPPELLETTI, C., 1930. — Sterilita di origine micotica nella *Ruta patavina* L. Ann. di Bot. 18; 145—173, Pl. VI—VII.

CASTETTER, E. F., 1930. — Species crosses in the genus *Cucurbita*. Amer. Jour. Bot. 17; 41—57.

CATALANO, G., 1930. — Contributo alla conoscenza delle cause della sterilità in *Agave* e *Fourcroya*. Lavor. del R. Institut. Bot. Palermo 1; 1—59, Pl. I—III.

CATCHESIDE, D. G., 1930*a*. — Chromosome linkage and syndesis in *Oenothera*. Trans. Roy. Soc. Edinburgh 56; 467—484; Pl. I—III.

CATCHESIDE, D. G., 1930*b*. — Meiosis in a triploid *Oenothera*. Nature 126; 725.

CHIARUGI, A., 1930*a*. — Il numero dei cromosomi della *Vitaliana primulaeflora* BERTOL e dell' *Aretia alpina* L. Nuovo Giorn. Bot. Ital. 37; 275—276.

CHIARUGI, A., 1930*b*. — Partenocarpia in *Zizyphus sativa* GAERTN. Nuovo Giorn. Bot. Ital. 37; 287—312.

CHIARUGI, A., 1930*c*. — L'inversione sessuale apomeiotica nelle antere di *Ochna serrulata* WALP. e il suo probabile significato nei riguardi dell' apomissia. Bollett. Soc. Ital. Speriment. 5; 286—289.

CHIARUGI, A., 1930*d*. — *Vitaliana primulaeflora* BERTOL. Studio cariologico sistematico e fitogeografico. Nuovo Giorn. Bot. Ital. 37; 319—368, Pl. XVIII.

CHIARUGI, A. & FRANCINI E., 1930. — Apomissia in *Ochna serrulata* WALP. Nuovo Giorn. Bot. Ital. 37; 1—250, Pl. I—XVII.

CHRISTOFF, M., 1930. — A haploid tobacco plant. Annuaire Univ. Sofia Facult. Agron. 8; 285—296.

CLAUSEN, J., 1930. — Male sterility in *Viola orphanidis*. Hereditas 14; 53—72.

CLAUSEN, R. E., 1930. — Inheritance in *Nicotiana tabacum* X. Carmine-coral variegation. Cytologia 1; 358—368.

CLELAND, R. E. & OEHLKERS, F., 1930. — Erblichkeit und Zytologie verschiedener Oenotheren und ihrer Kreuzungen. Jahrb. wiss. Bot. 73; 1—124.

CORTI, R., 1930*a*. — Primi risultati di richerche sulla embriologia e la cariologia di alcune *Leguminosae*. Nuovo Giorn. Bot. Ital. 37, 278—279.

CORTI, R., 1930*b*. — Embriologia del genere *Ionopsidium* RCHB. Nuovo Giorn. Bot. Ital. 37; 510—526.

DARLINGTON, C. D., 1930*a*. — Studies in *Prunus* III. Jour. Genet. 22; 65—93.

DARLINGTON, C. D., 1930*b*. — Chromosome studies in *Fritillaria* III. Chiasma formation and chromosome pairing in *Fritillaria imperialis*. Cytologia 2; 37—55.

DARLINGTON, C. D., 1930*c*. — A cytological demonstration of genetic crossing-over. Proc. Roy. Soc. London Ser. B. 107; 50—59, Pl. V.

DARLINGTON, C. D. & MOFFETT, A. A., 1930. — Primary and secondary chromosome balance in *Pyrus*. Jour. Genet. 22; 129—163, Pl. V.

DAVIS, B. M. & KULKARNI, C. G., 1930. — The cytology and genetics of a haploid sport from *Oenothera franciscana*. Genetics 15; 55—80, Pl. I—IV.

DELAUNAY, L., 1930. — Die Chromosomenaberranten in der Nachkommenschaft von röntgenisierten Ähren einer reinen Linie von *Triticum vulgare albidum* ALL. Zeitschr. Indukt. Abst. Vererb. Lehre 55; 352—355.

DRUDE, O., 1898. — *Umbelliferae* in ENGLER-PRANTL: Die natürlichen Pflanzenfamilien III. Abt. 8; 63—250.

EAST, E. M., 1930*a*. — The production of homozygotes through induced parthenogenesis. Science 72; 148—149.

EAST, E. M., 1930*b*. — The origin of the plants of maternal type which occur in connection with interspecific hybridizations. Proc. Nat. Acad. Sci. 16; 377—380.

EGHIS, S. A., 1930. — Experiments on the interspecific hybridisation in the genus *Nicotiana*. I. The fertile hybrids between *N. Tabacum* L. and *N. sylvestris* SPEG. & COMES. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. (1929) 2; 571—584.

EMERSON, S., 1930. — The inheritance of Rubricalyx bud color in crosses with *Oenothera Lamarckiana*. Proc. Nat. Acad. Sci. 16; 796—800.

EMME, E. K., 1930*b*. — Karyosystematical investigation of the section *Eu-Avena* GRISEB. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 585—586.

EMME, H., 1930*a*. — Über Chromosomen von Hafer und Haferbastarden. Züchter 2; 65—68.

ERLANSON, E. W., 1930. — Field observations on wild roses of the western United States. Papers Mich. Acad. Sci., Arts and Letters 11 (1929); 117—150.

FERNANDES, A., 1930*a*. — Observations anatomiques et cytologiques sur *Narcissus bulbocodium* L. C. R. Soc. Biol. 103; 1267—1269.

FERNANDES, A., 1930*b*. — Sur le nombre et la morphologie des chromosomes chez quelques espèces du genre *Narcissus* L. C. R. Soc. Biol. 105; 135—137.

FERNANDES, A., 1930*c*. — Sur le nombre et la forme des chromosomes chez *Amaryllis belladonna* L., *Pancratium maritimum* L., et *Ruscus aculeatus* L. C. R. Soc. Biol. 105; 138—139.

FIKRY, M. A., 1930. — Phenomena of heterotypic division in the pollen mothercells of a tetraploid form of *Rumex scutatus* var. *typicus*. Jour. Roy. Micros. Soc., Series III, 50; 387—419, Pl. I—VI.

FRIESNER, R. C., 1930. — Chromosome numbers in ten species of *Quercus* with some remarks on the contributions of cytology to taxonomy. Butler Univ. Bot. Stud. 1; 77—103, Pl. I—II.

FRYER, J. R., 1930. — Cytological studies in *Medicago*, *Melilotus* and *Trigonella*. Can. Jour. Res. 3; 3—50.

GAIRDNER, A. E. & DARLINGTON, C. D., 1930. — Structural variation in the chromosomes of *Campanula persicifolia*. Nature 125: 87—88.

GAISER, L. O., 1926. — A list of chromosome numbers in angiosperms. Genetica 8; 401—484.

GAISER, L. O., 1930*a*. — Chromosome numbers in angiosperms. II. Bibliographia Genetica 6; 171—466.

GAISER, L. O., 1930*b*. — Chromosome numbers in angiosperms. III. Genetica 12; 159—256.

GATES, R. R. & GOODWIN, K. M., 1930. — A new haploid *Oenothera*, with some considerations on haploidy in plants and animals. Jour. Genet. 23; 123—156, Pl. VII.

GATES, R. R. & SHEFFIELD, F. M. L., 1930. — VII. Chromosome linkage in certain *Oenothera* hybrids. Phil. Trans. Roy. Soc. London Ser. B. 217; 367—394, Pl. LXXXIX—XC.

GHIMPU, V., 1930. — Recherches cytologiques sur les genres: *Hordeum*, *Acacia*, *Medicago*, *Vitis* et *Quercus*. Arch. d'Anat. Micros. 26; 135—250, Pl. I—VI.

GOODSPEED, T. H., 1930*a*. — Inheritance in *Nicotiana Tabacum*. IX. Mutations following treatment with X-rays and radium. Univ. Calif. Pub. Bot. 11; 285—298.

GOODSPEED, T. H., 1930*b*. — Occurrence of triploid and tetraploid individuals in X-ray progenies of *Nicotiana Tabacum*. Univ. Calif. Pub. Bot. 11; 299—308.

GOODSPEED, T. H., 1930*c*. — Meiotic phenomena characteristic of first generation progenies from X-rayed tissues of *Nicotiana Tabacum*. Univ. Calif. Pub. Bot. 11; 309—318.

GOODSPEED, T. H. & AVERY, P., 1930. — Nature and significance of structural chromosome alterations induced by X-rays and radium. Cytologia 1; 308—327, Pl. XVIII—XXI.

GOTOH, K. & STOW, I., 1930. — Karyologische Studien über die Gattungen *Trillium* und *Paris*. Jap. Jour. Genet. 5; 114—117.

GRECO, R., 1930. — Embriologia del *Myrtus communis* L. Nuovo Giorn. Bot. Ital. 37; 609—630.

GREGOR, J. W. & SANSOME, F. W., 1930. — Experiments on the genetics of wild populations. II. *Phleum pratense* L. and the hybrid *P. pratense* × *P. alpinum* L. Jour. Genet. 22; 373—387, Pl. XV—XVI.

HAASE-BESSELL, G., 1930. — Gemini-Analyse. Planta 11; 88—107, Pl. II—IV.

HÅKANSSON, A., 1930*a*. — Zytologische Beobachtungen an S. G. Speltoid-heterozygoten beim Weizen. Svensk. Bot. Tids. 24; 44—57.

HÅKANSSON, A., 1930*b*. — Die Chromosomenreduktion bei einigen Mutanten und Bastarden von *Oenothera Lamarckiana*. Jahrb. Wiss. Bot. 72; 385—402.

HÅKANSSON, A., 1930*c*. — Zur Zytologie trisomischer Mutanten aus *Oenothera Lamarckiana*. Hereditas 14; 1—32.

HAMMARLUND, C. & HÅKANSSON, A., 1930. — Parallelism of chromosome ring formation, sterility and linkage in *Pisum*. Hereditas 14; 97—98.

HARRISON, H. H., 1930. — Some peculiarities in the chromosome behaviour of *Euphorbia Terracina*. Proc. Univ. Durham Philosoph. Soc. 8; 252—259.

HARRISON, J. W. H., 1930. — New British roses from Northumberland. Proc. Univ. Durham Philosoph. Soc. 8; 161—167.

HEILBORN, O., 1930. — Temperatur und Chromosomenkonjugation. Svensk. Bot. Tids. 24; 12—25.

HEYN, H., 1930. — Beitrag zur Cytologie der Kartoffel *Solanum tuberosum* L. Wiss. Arch. Landwirtschaft. Abt. A. Pflanzenbau 4; 123—168.

HOFFMANN, K. M., 1930. — Beiträge zur Cytologie der Orchidaceen. Planta 10; 523—595.

HOLLINGSHEAD, L., 1930*a*. — Cytological investigations of hybrids and hybrid derivatives of *Crepis capillaris* and *Crepis tectorum*. Univ. Calif. Pub. Agr. Sci. 6; 55—94, Pl. I—III.

HOLLINGSHEAD, L. 1930*b*. — A cytological study of haploid *Crepis capillaris* plants. Univ. Calif. Pub. Agr. Sci. 6; 107—134, Pl. VI—VIII.

HOLLINGSHEAD, L. & BABCOCK, E. B., 1930. — Chromosomes and phylogeny in *Crepis*. Univ. Calif. Pub. Agr. Sci. 6; 1—53.

HUSKINS, C. L. & LA-COUR, L., 1930. — Chromosome numbers in *Capsicum*. Amer. Nat. 64; 382—383.

ICHIJIMA, K., 1930. — Studies on the genetics of *Fragaria*. Zeitschr. Indukt. Abst. Vererb. Lehre 55; 300—347, Pl. III—IV.

ISHII, T., 1930. — Chromosome studies in *Dianthus* I. Cytologia 1; 335—339.

IVANOV, F. I., 1930. — On crosses of tetraploid oat forms. (*Av. barbata* POTT., *Av. Brauni* KÖRN.) among themselves and with hexaploid forms (*Av. sativa* L., *Av. nuda* L. var. *inermis* KÖRN., *Av. Ludoviciana* DUR., *Av. sterilis* L.). Proc. U. S. S. R. Cong. Genet. Plant Animal Breed. 2 (1929); 243—263.

JARETZKY, R., 1930. — Zur Zytologie der *Fagales*. Planta 10; 120—137.

JENKINS, J. A. & THOMPSON, W. P., 1930. — Chromosome conditions in the second and third generations of pentaploid wheat hybrids. Can. Jour. Res. 2; 162—70.

KARPECHENKO, G. D., 1930. — A contribution to the synthesis of a constant hybrid of three species. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 277—294.

KATO, K., 1930*a*. — Cytological studies of pollen mother-cells of *Rhoeo discolor* HANCE, with special reference to the question of the mode of syndesis. Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. 5; 139—162, Pl. XIII—XIV.

KATO, K., 1930*b*. — Chromosome arrangement in the meiotic divisions in pollen mother cells of *Rhoeo discolor* HANCE. Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. 5; 229—238.

KATO, S., 1930. — On the affinity of the cultivated varieties of rice plants *Oryza sativa* L. Jour. Dept. Agr. Kyushu Imp. Univ. 2; 241—276.

KATTERMANN, G., 1930. — Chromosomenuntersuchungen bei Gramineen. Planta 12; 19—37, Pl. I—V.

KAWAKAMI, J., 1930. — Chromosome numbers in *Leguminosae*. Bot. Mag. Tokyo 44; 319—328.

KIHARA, H., 1930. — Karyologische Studien an *Fragaria* mit besonderer Berücksichtigung der Geschlechtschromosomen. Cytologia 1; 345—357.

KIHARA, H. & NISHIYAMA, I., 1930. — Genomaffinitäten in tri-, tetra- und pentaploiden Weizenbastarden. Cytologia 1; 270—284.

KOERPERICH, J., 1930. — Étude comparative du noyau, des chromosomes et de leurs relations avec le cytoplasme (*Nothoscordum*, *Eucomis*, *Beschorneria*). La Cellule 39; 307—398, Pl. I—IV.

KOSTOFF, D., 1930*a*. — Chromosomal aberrants and gene mutations in *Nicotiana* obtained by grafting. Jour. Genet. 22; 399—418.

KOSTOFF, D., 1930*b*. — Biology of the callus. Annuaire Univ. Sofia Facult. Agron. 8; 297—316.

KOSTOFF, D., 1930*c*. — Eine tetraploide *Petunia*. Zeitschr. Zellforsch. Mikros. Anat. 10; 783—786.

KOSTOFF, D., 1930*d*. — Ontogeny, genetics and cytology of *Nicotiana* hybrids. Genetica 12; 33—139, Pl. I—X.

KOSTOFF, D., 1930*e*. — Hybrid mutation, chromosome aberration and sterility in pepper (*Capsicum*). Sved. Zemled (Renseign. Agr.) Sofia 11; 17—57.

KOZHUKHOW, Z. A., 1930. — Karyological investigations of the genus *Cucumis*. Bull. Appl. Bot. Plant Breed. 23; 357—366.

KRAUSE, O., 1930. — Cytologische Studien bei den *Urticales*. Ber. Deutsch. Bot. Ges. 48; 9—13.

KRENKE, N., 1930. — Chimeren zwischen *Saracha umbellata* DON. und *Solanum lycopersicum* L. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 319—342.

KREUTER, E., 1930. — Beitrag zur karyologisch-systematischen Studien an Galegeen. Planta 11; 1—44.

LAWRENCE, W. J. C., 1930. — Incompatibility in polyploids. Genetica 12; 269—296.

LESLEY, M. M. and J. W., 1930. — The mode of origin and chromosome behaviour in pollen mother cells of a tetraploid seedling tomato. Jour. Genet. 22; 419—425, Pl. XVIII—XIX.

LEVAN, A., 1930. — Beitrag zur Kenntnis der Chromosomen in der Gattung *Dactylis* L. Bot. Not. 2; 95—104.

LEVINE, M., 1930. — The chromosome number in cancer tissue of man, of rodent, of bird, and in crown gall tissue of plants. Jour. Cancer Res. 14; 400—425.

LEVITSKY, G. A., 1930. — Investigation on the morphology of chromosomes. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 87—105.

LEVITSKY, G. A. & BENETZKAIA, G. K., 1930. — Cytological investigation of constant intermediate rye-wheat hybrids. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 345—352.

LEVITSKY, G. A. & TRON, E. J., 1930. — Zur Frage der karyotypischen Evolution der Gattung *Muscari* MILL. Planta 9; 760—775.

LIETZ, J., 1930. — Beiträge zur Zytologie der Gattung *Mentha*. Heil- und Gewürz-Pflanzen 12; 73—86; 113—131.

LINDSAY, R. H., 1930. — The chromosomes of some dioecious Angiosperms. Amer. Jour. Bot. 17; 152—174, Pl. IX—XI.

LONGLEY, A. E. & CLARK, C. F., 1930. — Chromosome behavior and pollen production in the potato. Jour. Agr. Res. 41; 867—887, Pl. I—II.

LONGLEY, A. E. & SANDO, W. J., 1930. — Nuclear divisions in the pollen mother cells of *Triticum*, *Aegilops* and *Secale* and their hybrids. Jour. Agr. Res. 40; 683—719, Pl. I—II.

LUTKOV, A. N., 1930. — Interspecific hybrids of *Pisum humile* BOISS. × *Pisum sativum* L. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 353—367.

MCKAY, L. W., 1930. — Chromosome numbers in the *Cucurbitaceae*. Bot. Gaz. 89; 416—417.

MAEDA, T., 1930*a*. — The meiotic divisions in pollen mother cells of the sweet-pea (*Lathyrus odoratus* L.) with special reference to the cytological basis of crossing-over. Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. 5; 89—124, Pl. V—XII.

MAEDA, T., 1930*b*. — On the configurations of gemini in the pollen mother cells of *Vicia faba* L. Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B. 5; 125—127.

MALZEO, A. I., 1930. — Wild and cultivated oats. Verlag. des Inst. für angew. Bot. und neue Kulturen Leningrad.

MANTON, I., 1930. — A note on the cytology of the genus *Matthiola*. Mem. & Proc. Manchester Lit. & Philosoph. Soc. 74; 53—5.

MATSUDA, H., 1930. — Further studies on the origin of giant pollen grains in *Petunia*. Proc. Crop. Sci. Soc. Japan 2; 110—119, Pl. VI—VII.

MELDERIS, A., 1930. — Chromosome numbers in *Umbelliferae*. Acta Horti. Bot. Univers. Latvi. 5; 1—8.

MESSERI, A., 1930. — Il numero dei cromosomi dell' *Allium roseum* v. *bulbilliferum* e dell' *A.* confr. *odorum* e nuovi esempi di rapporti fra apomissia e poliploidismo. Nuovo Giorn. Ital. Bot. 37; 276—277.

MEURMAN, O., 1930. — Chromosome numbers in the family *Cornaceae*. Mem. Soc. Fauna et Flora Fennica 6; 95—100.

MILLER, E. W., 1930. — A preliminary note on the cytology of the *Melanthioideae* section of the *Liliaceae*. Proc. Univ. Durham Philosoph. Soc. 8; 267—271.

MIYAJI, Y., 1930*a*. — Betrachtungen über die Chromosomenzahlen von *Viola*, *Violaceen* und verwandten Familien. Planta 11; 631—649.

MIYAJI, Y., 1930*b*. — Beiträge zur Chromosomenphylogenie der Berberidaceen. Planta 11; 650—659.

MOL, W. E. DE, 1930. — Cytologische onderzoekingen met betrekking tot de vraag naar den oorsprong der z.g. „Tulpendieven". Bot. Jaarboek 22; 40—53.

MORINAGA, T. and FUKUSHIMA, E., 1930. — Another new chromosome number in *Brassica*. Bot. Mag. Tokyo 44; 373—374.

MÜNTZING, A., 1930*a*. — Outlines to a genetic monograph of the genus *Galeopsis* with special reference to the nature and inheritance of partial sterility. Hereditas 13; 185—341.

MÜNTZING, A., 1930*b*. — Über Chromosomenvermehrung in *Galeopsis*-Kreuzungen und ihre phylogenetische Bedeutung. Hereditas 14; 153—172.

MÜNTZING, A., 1930*c*. — Einige Beobachtungen über die Zytologie der Speltoid Mutanten. Bot. Not. 1; 35—47.

NAGAO, S., 1930*a*. — Chromosome arrangement in the heterotype division of pollen mother cells in *Narcissus tazetta* L. and *Lilium japonicum* THUNB. Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B 5; 163—182.

NAGAO, S., 1930*b*. — On the meiosis in the polyanthus narcissus, *Narcissus tazetta* L. Karyological studies of the narcissus plant II. Jap. Jour. Genet. (Jap. with Eng. summary) 5; 159—171.

NAGAI, K. & SASAOKA, T., 1930*a*. — The number of chromosomes in the cultivated *Brassica*. Jap. Jour. Genet. 5; 152—158, Pl. V.

NAGAI, K. & SASAOKA, T., 1930*b*. — Jour. Okitsu Hort. Soc. 25; 76—77.

NAKAJIMA, G., 1930. — On the chromosome number in some agricultural plants. Jap. Jour. Genet. 5; 172—176.

NAVASHIN, M., 1930. — Unbalanced somatic chromosomal variation in *Crepis*. Univ. Calif. Pub. Agr. Sci. 6; 95—106, Pl. IV—V.

NEGODI, G., 1930. — Sporofilli e gametofiti in *Urtica caudata* VAHL. Ann. di Bot. 18; 325—328.

NEGRUL, A. M., 1930. — Chromosomenzahl und Charakter der Reduktionsteilung bei den Artbastarden der Weinrebe (*Vitis*). Züchter 2; 33—43.

NEWTON, W. C. F. & DARLINGTON, C. D., 1930. — *Fritillaria meleagris*: Chiasmaformation and distribution. Jour. Genet. 22; 1—14.

NORDHEIM, K., 1930. — Entwicklungsgeschichtlich-zytologische und mikrochemische Untersuchungen an *Conium maculatum* L. Diss. Berlin.

OKABE, S., 1930. — Über Parthenogenesis bei *Houttuynia cordata*. Jap. Jour. Genet. 6; 14—19.

O'MARA, J., 1930. — Chromosome numbers in the genus *Forsythia*. Jour. Arnold Arboretum 11; 14—15.

ONO, T., 1930*a*. — Chromosomenmorphologie von *Rumex acetosa*. Sci. Reports Tohoku Imp. Univ. 4, Ser. 5; 415—422.

ONO, T., 1930*b*. — Further investigations on the cytology of *Rumex*. VI. On the intersexual plant of *R. acetosa*. VII. Chromosomes of *R. montanus*. VIII. Chromosomes of an intersexual plant of *R. acetosella*. Bot. Mag. Tokyo 44; 168—176.

ONO, T., 1930*c*. — Chromosomes of *Rumex papilio* COSS. et BAL. Bot. Mag. Tokyo 44; 562—563.

PASSMORE, S. F., 1930. — Microsporogenesis in the *Cucurbitaceae*. Bot. Gaz. 90; 213—223.

PERCIVAL, J., 1930. — Cytological studies of some hybrids of *Aegilops* sp. × wheats, and of some hybrids between different species of *Aegilops*. Jour. Genet. 22; 200—278.

PETO, F. H., 1930. — Cytological studies in the genus *Agropyron*. Can. Jour. Res. 3; 428—448.

PLOTNIKOWA, T. W., 1930. — Zytologische Untersuchung von Bastarden zwischen 28 chromosomigen Weizen und Roggen. Planta 12; 167—183.

PROSINA, M., 1930. — Embryologische Untersuchungen an *Eremurus spectabilis* M. B. var. *Regeli*. Planta 9; 748—759.

RAU, N. S., 1930. — On reduction division in the pollen-mother-cells of *Cyanotis cristata*. Jour. Indian Bot. Soc. Madras 9; 79—113.

REEVES, R. G., 1930. — Nuclear and cytoplasmic division in the microsporogenesis of alfalfa. Amer. Jour. Bot. 17; 29—40, Pl. VI—VII.

REHDER, A., 1927. — Manual of cultivated trees and shrubs. McMillan Co., 930 pp.

RICHARDSON, M. M., 1930. — The chromosome numbers of some species and hybrids in the Candelabra section of the genus *Primula*. Proc. Univ. Durham Philosoph. Soc. 8; 272—279.

RIEDE, W., 1930. — Cytologisch-genetische Studien an *Petunia*. Gartenbauwiss. 3; 185—200.

RODOLICO, A., 1930. — Embriologia del *Buphthalmum salicifolium* L. Nuovo Giorn. Bot. Ital., 37; 592—608, Pl. XXIII—XXIV.

RUDENKO, T. E., 1930. — Male cells of *Scrophulariaceae*. Bull. Jard. Bot. Kieff 11; 41—55, I Pl.

RUDLOFF, C. F., 1930*a*. — Entwicklungsphysiologische Studien in der Gattung *Fragaria* I. Gartenbauwiss. 3; 79—100.

RUDLOFF, C. F., 1930*b*. — *Oenothera pachycarpa* RENNER Genetische und cytologische Untersuchungen. Gartenbauwiss. 3; 499—526.

RYBIN, W. A., 1930*a*. — Karyologische Untersuchungen an einigen wilden und einheimischen kultivierten Kartoffeln Amerikas. Zeitschr. Indukt. Abst. Vererb. Lehre 53; 313—354; Pl. IX—XI.

RYBIN, W. A., 1930*b*. — Cytological features of the allotetraploid *Nicotiana Tabacum* × *Nicotiana sylvestris*. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 437—445, Pl. I—II.

SAPEHIN, A. A., 1930. — The genetics of interspecific crosses. Proc. U. S. S. R. Cong. Genet. Plant Animal Breed. 2 (1929); 19—26.

SAPEHIN, L. A., 1930. — Über die faktorielle Natur der Unterschiede im

Verlaufe der Reduktionsteilung. Ber. Deutsch. Bot. Ges. 48; 443—457.

SASAOKA, T., 1930. — Karyological observations in different interspecific hybrids of *Brassica*. Jap. Jour. Genet. 6; 20—32.

SAX, H. J., 1930. — Chromosome numbers in *Quercus*. Jour. Arnold Arboretum 11; 220—223.

SAX, K., 1930*a*. — Chromosome number and behavior in the genus *Syringa*. Jour. Arnold Arboretum 11; 7—14, Pl. XXI.

SAX, K., 1930*b*. — Chromosome stability in the genus *Rhododendron*. Amer. Jour. Bot. 17; 247—251, Pl. XX.

SAX, K., 1930*c*. — Chromosome structure and the mechanism of crossing-over. Jour. Arnold Arboretum 11; 193—220, Pl. XXV—XXVI.

SAX, K., & KRIBS, D. A., 1930. — Chromosomes and phylogeny in *Caprifoliaceae*. Jour. Arnold Arboretum 11; 147—153, Pl. XXIV.

SCHIEMANN, E., 1930. — Über Geschlechts- und Artkreuzungsfragen bei *Fragaria*. Ber. Deutsch. Bot. Ges. 48; 211—222.

SCHULZ-GAEBEL, HANS-HEINRICH, 1930. — Entwicklungsgeschichtlich = zytologische Studien an der Umbelliferen = Unterfamilie der Apioideen. Beitr. Bio. Pflanz. Cohn 18; 345—398.

SELIM, A. G., 1930. — A cytological study of *Oryza sativa* L. Cytologia 2; 1—26.

SENJANINOVA-KORCZAGINA, M. V., 1930. — Karyo-systematical investigation of the genus *Aegilops*. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 453—466.

SETHI, M. L., 1930. — Microsporogenesis in *Cassia didymobotrya*. Jour. Indian Bot. Soc. Madras 9; 126—139, Pl. I—III.

SHIBUKAWA, T., 1930. — The chromosome numbers in some species of *Dianthus*. Bot. Mag. Tokyo 44; 561—562.

SHIMOTOMAI, N., 1930*a*. — Chromosomenzahlen und Phylogenie bei der Gattung *Potentilla*. Jour. Sci. Hiroshima Univ. Ser. B. Div. 2, 1; 1—11.

SHIMOTOMAI, N., 1930*b*. — Über die Chromosomenzahlen und die Phylogenie bei der Gattung *Potentilla*. Bot. Mag. Tokyo 44; 490—498.

SHIMOTOMAI, N., 1930*c*. — Autosyndese der Chromosomen bei einen Artbastard von *Chrysanthemum*. Bot. Mag. Tokyo 44; 672—677.

SIMMLER, G., 1910. — Monographie der Gattung *Saponaria*. Denksch. K. Akad. Wiss. Wien. 85.

SIMON, S. V. and LOWIG, E., 1930. — Zur Zytologie der Gattung *Torenia* sowie einiger Mutanten von *T. Fournieri*. Jahrb.wiss. Bot. 72; 466—511.

SIMONET, M., 1930*a*. — Nouvelles recherches sur le nombre des chromosomes chez les *Iris* et sur l'existence de mitoses didiploides dans ce genre. C. R. Soc. Bio. 103; 1197—1200.

SIMONET, M., 1930*b*. — Étude cytologique de quelques hybrides d'*Iris*. C. R. Acad. Sci. 191; 1365—1367.

SIMONET, M., 1930*c*. — Nouvelles observations cytologiques chez les *Iris*. C. R. Soc. Biol. 105; 740—741.

SMITH, W. W. & FORREST, G., 1929. — The sections of the genus *Primula*. Jour. Roy. Hort. Soc. 54; 4.

SÖMME, A. S., 1930. — Genetics and cytology of the tetraploid form of *Primula sinensis*. Jour. Genet. 23; 447—509, Pl. XIX—XXIV.

STEVENSON, F. J., 1930*a*. — Genetic characters in relation to chromosome numbers in a wheat species cross. Res. Stud. State Coll. Washington 2; 78—79.

STEVENSON, F. J., 1930*b*. — Genetic characters in relation to chromosome numbers in a wheat species cross. Jour. Agr. Res. 41; 161—179.

STOW, I., 1930. — Experimental studies on the formation of the embryosac-like giant pollen grain in the anther of *Hyacinthus orientalis*. Cytologia 1; 417—439, Pl. XXIV—XXVI.

SUTARIA, R. N., 1930. — Microsporogenesis in *Raphanus sativus* L. Jour. Indian Bot. Soc. Madras 9; 253—256, Pl. I—III.

SVESHNIKOVA, I., 1930. — Reduction division in the hybrids of *Vicia*. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 447—452.

TAKENAKA, Y., 1930. — On the sex chromosomes of *Rumex montanus* DESF. Bot. Mag. Tokyo 44; 176—184.

TAKENAKA, Y. & NAGAMATSU, T., 1930. — On the chromosomes of *Lilium tigrinum* KER GAWL. Bot. Mag. Tokyo 44; 386—391.

TAUBERT, P., 1891. — *Leguminosae*. ENGLER & PRANTL. Die natürlichen Pflanzenfamilien 3. 240—48.

THOMPSON, W. P. & ROBERTSON, H. T., 1930. — Cytological irregularities in hybrids between species of wheat with the same chromosome number. Cytologia 1; 252—262, Pl. XV.

TISCHLER, G., 1930. — Über die Bastardnatur des persischen Flieders. Zeitschr. Bot. 23; 150—162.

TJEBBES, K., 1930. — Interfertile Gruppen innerhalb einer selbststerilen Form von *Portulaca grandiflora* LINDL. Bot. Not. 1; 48—52.

TRANKOWSKY, D. A., 1930*a*. — Zytologische Beobachtungen über die Entwicklung der Pollenschläuche einiger Angiospermen. Planta 12; 1—18.

TRANKOWSKY, D. A., 1930*b*. — „Leitkörperchen" der Chromosomen bei einigen Angiospermen. Zeitschr. Zellforsch. Mikros. Anat. 10; 736—743.

TSCHECHOW, W., 1930. — Karyologisch-systematische Untersuchung des Tribus *Galegeae*, Fam. *Leguminosae*. Planta 9; 673—680.

TSCHERMAK, E., 1930. — Neue Beobachtungen am fertilen Artbastard *Triticum turgidovillosum*. Ber. Deutsch. Bot. Ges. 48; 400—407.

TURESSON, G., 1930. — Studiën über *Festuca ovina* L. II. Chromosomenzahl und Viviparie. Hereditas 13; 177—184.

TUSCHNJAKOWA, M., 1930. — Über einen eigenartigen dreifachen Chromosomenkomplex in der Reduktionsteilung der Pollenmutterzellen von *Humulus japonicus* S. et Z. Planta 10; 597—610.

VAKAR, B. A., 1930. — Cytological investigation of hybrids between *Triticum persicum* VAV. and other wheat species. Proc. U. S. S. R. Congr. Genet. Plant Animal Breed. 2 (1929); 187—196.

VENTURA, M., 1930. — Osservazioni sulla embriologia di *Daphniphyllum macropodum* MIQ. Ann. di Bot. 18; 395—401, Pl. XIX.

VRIES, H. DE, 1930. — Über das Auftreten von Mutanten aus *Oenothera*

Lamarckiana. Zeitschr. Indukt. Abst. Vererb. Lehre 57; 121—190.

WAKAKUWA, S., 1930. — Bestäubungs- und Keimungsversuche in reziproken *Triticum*-Kreuzungen. Jap. Jour. Genet. 6; 93—100.

WALLISCH, R., 1930. — Die Chromosomenverhältnisse bei *Tilia platyphyllos*, *Tilia cordata* und *Tilia argentea*. Oesterr. Bot. Zeit. 79; 97—106.

WEBBER, J. M., 1930*a*. — Interspecific hybridization in *Nicotiana*. XI. The cytology of a sesquidiploid hybrid between *Tabacum* and *sylvestris*. Univ. Calif. Pub. Bot. 11; 319—354, Pl. X—XV.

WEBBER, J. M., 1930*b*. — Chromosome number and morphology in *Nicotiana*. V. The character of tetraploid areas in chromosomal chimeras of *N. sylvestris* SPEG. and COMES. Univ. Calif. Pub. Bot. 11; 355—366.

WEIER, T. E., 1930. — A comparison of the meiotic prophases in *Oenothera Lamarckiana* and *Oenothera Hookeri*. La Cellule 39; 269—306, Pl. I—II.

WEST, G., 1930. — Cleistogamy in *Viola Riviniana* with especial reference to its cytological aspects. Ann. Bot. 44; 87—110, Pl. XI—XII.

WHITAKER, T. W., 1930. — Chromosome numbers in cultivated cucurbits. Amer. Jour. Bot. 17; 1033—1040, Pl. LXIII.

WHYTE, R. O., 1930. — Sterility and floral abnormality in the tetraploid *Saxifraga potternensis*. Jour. Genet. 23; 93—121.

WILCKE, J., 1930. — Karyologische Untersuchungen an drei Saisonformen des *Alectorolophus hirsutus*. Oesterr. Bot. Zeit. 79; 78—94.

WOLF, T., 1908. — Monographie der Gattung *Potentilla*. Bibliotheca Botanica 71.

WOODWORTH, R. H., 1930*a*. — Cytological studies in the Betulaceae. III. Parthenogenesis and polyembryony in *Alnus rugosa*. Bot. Gaz. 89; 402—409, Pl. IX.

WOODWORTH, R. H., 1930*b*. — Cytological studies on the *Betulaceae*. IV. *Betula, Carpinus, Ostrya, Ostryopsis*. Bot. Gaz. 90; 106—115.

WOODWORTH, R. H. 1930*c*. — Meiosis of microsporogenesis in the *Juglandaceae*. Amer. Jour. Bot. 17; 863—869, Pl. L—LI.